

PROCEEDINGS

18th World Rose Convention



Copenhagen, 28th June – 4th July 2018

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Saturday 30th of June – 08.30-09.30

The history of the rose in Denmark

Torben Thim, Denmark



Fossilised roses; Wild roses in Denmark after the last ice age; The Viking Age – the first evidence; King Christian IV and his roses; Two centuries of the rose; Denmark's rose breeders; Queen Ingrid's roses; Denmark's rose gardens; Queen Margrethe II's roses at Marselisborg – that's what roses are all about!

Everything has a past – the rose too. Before becoming a cultivated plant, the rose developed over a period of more than 100 million years. From the Cretaceous landscape with dinosaurs and cryptogams to the Tertiary period [ca. 60 – 2 million years ago], to the Quaternary period [2 million years ago and beyond] with flowers and mammals – to the Holocene period, which covers the last 11,000 years after the last ice age when the rose and the human came together in ethnobotanical unity. First, with the wild rose, the species. Then later, much later, with the rose as a cultivated product of artificial pollination.

Over the last 5,000 years, the rose has been associated with power, magic and purifying properties – the stuff of prevailing myths. It plays a part in the dealings and day-to-day life of humankind. As sub rosa, spoils of war, tax payments, perfume, symbols of power, etc. It is found in the service of love as a bouquet to celebrate people's anniversaries. A political flower, in art – especially in painting and poetry. In the last couple of hundred years, it has become common property – bouquets, miniatures in supermarkets and decorative plants in our gardens.

CV

Torben Thim

*1946, rosarian, author, painter, architect

- 1967 Max Planck Institute for Behavioral Physiology, Seewiesen, Germany
- 1968-2017 Long-term study trips 1968–2017: Germany, Switzerland, Morocco, Spain, Netherlands, France, Italy, Czech Republic, Sweden
- 1969 University of Copenhagen, Philosophy Section
- 1971 Accademia di Belle Arti di Roma, Italy
- 1976 Member of the Committee for International Art Exhibitions
- 1973-2017 **Art exhibitions** in Denmark, Sweden, Norway, Italy and Switzerland
- 1979 **Owner** of Valdemar Petersen's nursery in Løve, Zealand, Denmark
- 1974-2017 **Awards and honours:** Several for visual art and architecture, but the most significant for the history of the rose – King Frederik and Queen Ingrid's Fund for Humanitarian and Cultural Purposes, and Queen Margrethe and Prince Henrik's Fund
- 1986-2017 **Lectures** in Denmark, Germany, Italy, France, Norway and Sweden
- 1996-2017 **Book titles** (Danish): Historiske Roser, Det Danske Nationalleksikon (co-author), Naturkalenderen, Christian IV - og hans Roser, Ghitas Roser, Prinsessen og baronen, Om roser jeg ved, Det er aldrig for sent, Rosa - forædleren.
(English): The Ambassador John L. Loeb Jr. Danish Art Collection (co-author), Islin's Mercantile Store - and the Carlsberg District
- 1984-2017 **References:** Weilbachs Kunstnerleksikon (central register of artworks and artists in the collections of Danish state-owned and state-subsidized museums), Danish art 1984, Danish and Swedish radio and television

NO LECTURE MANUSCRIPT AVAILABLE

Saturday 30th of June – 09.30-10.00

Cultural Heritage Roses Encountered in Norway

Per Harald Salvesen, Norway

Abstract

Genetic variation in Norwegian found roses/heritageroses – phylogeny and plant introduction history.

Collections of roses found in old gardens in Norway are grown in clone archives at the Arboretum and Botanical Gardens, Milde, University of Bergen, at Agder Nature Museum and Botanical Gardens, University of Agder, and in the Plant nursery at Norway's Environmental and Life Sciences University, Ås.

Selected roses from these collections have been examined with micro satellites for genetic variation at Sweden's Agricultural University, Alnarp. The results are analyzed based on the hypothesis that each of the rose varieties has arisen as a result of hybridization between differing parent species in a reticulate pattern.

The results obtained for the Norwegian roses will be compared to similar results from roses surveyed in Sweden and our other neighboring countries. Some preliminary finds will be reported and commented on here, while a complete review of the results will be published later.

- Per Harald Salvesen, Arboretum and Botanical Gardens, University of Bergen
- Eva Vike , Department of Landscape Architecture, Norway's Environmental and Life Sciences University
- Per Arvid Åsen, Natural Museum and Botanical Gardens, University of Agder.

CV

Per Harald Salvesen, (born 1951) cand. Real 1982, associate professor of botany at the University of Bergen, responsible for the collection of trees and shrubs in the Arboretum at Milde since 1990. Director of the Norwegian Arboretum Foundation. Editor of "Årringen ", the annual magazine of the Arboretum and the Botanical Gardens at the University Museum in Bergen (since 1997). Main interest: evolution and variation in Norwegian Flora and in historical garden plants. He has written several articles about historical garden plants, in particular about roses and box.



Genetic variation in Cultural Heritage Roses Encountered in Norway

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Introduction

Collections of heritage roses found in old gardens in Norway are grown in clone archives at the Universities in Agder, in Bergen, and at Ås. Selected specimens from these clones are surveyed for genetic variation in micro satellites at NordGen, Alnarp, Sweden.

The rose clone archives at Ås were assembled by Unni Dahl Grue (1940-2015) and Eva Vike. In cooperation with the Norwegian Rose Society roses were documented and collected as suckers, preferably in Eastern S. Norway.

The clone archives at the Norwegian Arboretum, Milde (Bergen) and in the Botanical garden, University of Agder, (Kristiansand) were assembled by Per Harald Salvesen & Per Arvid Åsen, documenting and collecting roses mainly along the coast of Norway.

Current conservation challenges

- Classifying the heritage roses to known cultivars and into horticultural groups poses difficulties
- Comparison of material from one collection to another, and between countries is not straightforward
- Creating names for nameless roses

Genetic studies initiated

Andersen et al (2016) used AFLP to elucidate possible hybridization between the locally endangered *Rosa spinosissima* and its hybrid with *R. mollis*, *R. ×sabinii* in W. Norway.

In Sweden old garden roses have been surveyed for variation in the six micro satellite markers E2b, P50, O506, B303, P518 and D221 with the methods described by Babaei & al. (2007) and Esselink et al (2002). We use the same methods and markers in the present study for the study of Norwegian garden roses. DNA data are supplied by the University Museum of Bergen (Andersen & Lindblom unpubl.) and NordGen, Alnarp (Carlson-Nilsson & Gustavsson unpubl.).

- The findings with AFLP is compared with the results obtained for *Rosa spinosissima* by means of micro satellites
- Norwegian heritage roses are compared with known cultivars and species collected in Sweden
- Micro satellite profiles are analyzed on the assumption that each rose morph has evolved through hybridization between different parental cultivars or species in a reticulate pattern

Six polymorphic micro satellite markers (fragments) were analyzed the genetic diversity of 71 accessions of roses collected in Norway. We here present some examples of the data obtained in NJNeighbor Network (SplitsTree4 by Huson & Bryant 2006).

Aims

- Assess the number of genetically distinct morphs in the archives
- Elucidate the introductory and evolutionary history of heritage roses
- Identify unique genetic material in our collections
- Minimize the number of clones to keep in clone archives for the future

Cultivated plants are best kept by sharing and using: Sharing is keeping! Through the brand 'Plantearven', the roses will be marketed to bring rare cultivars into renewed use, and thereby preserve them.



A hedge of 'Great Western' and *R. xalba* 'Maxima' planted in 1922. Photo: Per Harald Salvesen

Results

Heritage roses in old gardens in Norway known to be in cultivation since before ca. 1950 were included in the collections. These roses were tentatively classified based on morphological traits, flowering period, scent, etc. The following table summarizes the results:

Species roses	17
Old Garden Roses (OGR)	
Foetida hybrids	6
Pimpinellifolia hybrids	10++
Majales roses	2++
Villosa roses	2
Eglanteriae	2
«Frankfurt Roses»	3+
Gallica Roses	10+
Damask roses	7+
Centifolia roses	3+
Moss roses	8
Alba roses ('White Vicarage Roses')	7
Bourbon roses	8+
Shrub roses of uncertain affinity	6+
Boursault roses	3
China hybrids	1
Noisette roses	1
Hybrid Perpetuals	4
Tea Roses	1
Modern roses (since 1867)	
Blanda roses	1
Rugosa roses	5+
Musk roses/Floribunda roses	1
Wichuraina hybrids	9+
Multiflora hybrids	4
Hybrid Tea roses	3
Total	123+

Heritage roses, some preliminary genetic results

All micro satellite markers showed 13--36 alleles per sample (average 19.8).

So far a total of 76 different genotypes has been found.

More material will be surveyed, to include the all horticultural groups.

Critical comparisons between roses collected from different localities are intended, first priority is to compare representative specimens from Norway with the on-going studies in Sweden.

Hypotheses on the phylogeny of certain genotypes and clones are generated that will be subjected to future scrutiny.

Rosa spinosissima

Does this species represent an early garden escapee in SW Norway? The current distribution of the species is intriguing: very local, associated with ancient worship sites. At Mosterhamn (Bømlø,

Hoerdaland County) a Stone Cross dating from before AD 900 has been found, and the still standing Old Moster church dates from ca. AD 1000.

Native populations of *Rosa spinosissima* were sampled across the Norwegian Sea in a pilot study. Variation in micro satellite markers examined by Principal Coordinate analysis shows: while populations differ, no variation is found within Iceland populations. In W. Norwegian populations there is substantial variation, however, in particular within two populations cooccurring with the hybrid taxon *R. ×sabinii*. Two samples from Denmark cluster together with two Iceland population samples. Two other samples from Iceland and the Spyssey population in W. Norway cluster together with the 'Dunwich Rose' originating from East Anglia. The affinities demonstrated may indicate possible introduction routes (or long distance dispersal?) across the Norwegian sea.



Per Arvid Åsen surrounded by *Rosa spinosissima*. Photo: Elisabeth Goksøyr Åsen

Micro satellite variation in *Rosa spinosissima* wildtypes were compared with selected cultivars. In a NeighborNet EqualAngle diagram the affinities of the Iceland samples with wild types from Denmark is evident, while no strong association between the Iceland and W. Norwegian populations is seen. On the other hand the affinity of several samples from W. Norway cluster together with a sample of *R. aff. spinosissima* from an old garden in Ringeby (Hedmark, E. Norway). A reference sample of *R. villosa* clusters alongside with these, an effect less obvious in the AFLP data, where the closely related *R. mollis* is well separated from all the *R. spinosissima* individuals tested.

The *R. spinosissima* cultivars seem to cluster largely according to flower colour. A reference sample of this taxon and a sample tentatively classified as *R. altaica* appear to be quite different genetically, thus illustrating the problematic status of this taxon.

Other groups of rose cultivars

The observed micro satellite variation in Heritage Roses in old gardens is represented in a separate NeighborNet EqualAngle diagram.

The picture is complicated, and the results should be treated with caution. Some trends may still be noted. The Majales and Rugosae roses cluster together, so do the samples here classified as Villosae. Roses classified as belonging to Gallica with a couple of exceptions also cluster together. Bourbon roses and Hybrid Perpetuals seem to form clusters with some common ancestry, as well. On the other hand, samples tentatively classified as Centifolia, Damask or Moss roses are spread more or less erratically, and associate with more than one cluster in the diagram. Even more so the Shrub roses of uncertain affinity are spread across the diagram. In the case of the Moss roses, the character "moss" may seem to mask the true affinity of these roses, and may indicate that the character has arisen separately in different lines. In the case of the Damask and Centifolia roses, the lack of affinity between samples may have resulted from these roses being subject to much hybridization and selection due to their attractive and highly appreciated scent and beauty.



The rose-archive in the nursery at the university of Ås. Photo: Eva Vike

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Acknowledgements

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Vilhjálmur Lúðvíksson, Icelandic Horticultural Society, Iceland

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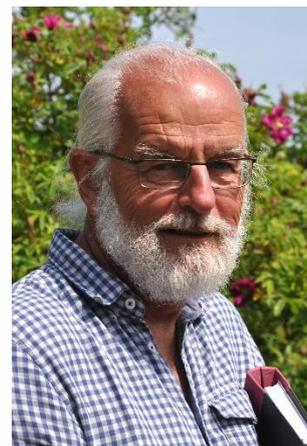
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Bergen University Museum & 'Grolle Olsens legat', University of Bergen, Norway
Norwegian University for Life Sciences, Ås
The Norwegian Arboretum, Milde, Bergen
Norwegian Rose Society
Norwegian Botany Society, Agder
NordGen, Sweden
Programmet för Odlad Mångfald (POM), Swedish University of Agricultural Sciences

POM - Sweden's national programme for cultivated plant diversity

Lars-Åke Gustavsson, Sweden

Abstract

To insure the long-term survival and sustainable use of cultivated plant resources, the Swedish programme for cultivated plant diversity, abbreviated POM in Swedish, was established. The programme was initiated by the Ministry of Agriculture in consultation with national authorities, organisations, the private sector and non-profit organisations active on the issues. Among these are The Swedish Rose Society, Rose Gardens, Botanical Gardens, Open-air Museums, NordGen (the Nordic Gene Bank) and many others. The Swedish University of Agricultural Sciences in Alnarp has the responsibility to co-ordinate POM's various activities.



To be recognized by POM for further studies and conservation, a rose must have a documented history dating back before 1950. All roses of Swedish origin shall also be a part of the Swedish National Gene Bank.

The main tasks for POM can be summarized under the following headings:

- Inventory and documentation
- Collection, evaluation and classification
- Comparative cultures
- DNA-studies
- Studies of literature and archives
- Conservation for the future in the National Gene Bank
- Increasing the use of the gene bank roses, incl. propagation and breeding
- Education, information and publication
- Organizing and carrying out research on cultivated plants, i.e. genetic variation
- International collaboration

Results - Summary

324 accessions of roses are preserved in the National Gene Bank, which consists of a central collection in Alnarp and 17 clone archives for duplicates scattered in the country. The National Gene Bank will be fully planted in 2019.

63 roses are under propagation for the market.

CV

Lars-Åke Gustavsson studied taxonomic botany at the University of Lund on the topic "Distribution patterns of the high mountain flora in Sterea Ellas, Greece."

During many years he was curator at Fredriksdal Open-Air Museum in Helsingborg, as head of its parks and gardens and for the construction and daily management of Fredriksdals Rosarium.

Through the years, Lars-Åke in many ways proven himself as one of Scandinavia's most appreciated rose experts.

Today, Lars-Åke is responsible for the national inventory of older cultivated roses, within the Swedish programme for cultivated plant diversity, POM, at the Swedish University of Agricultural Sciences, Alnarp.

Lars-Åke was one of the founders of the Swedish Rose Society and was its first chairman.

As a writer, photographer and lecturer Lars-Åke for a long time conveyed the knowledge of roses to both professional cultivators and an interested public. He has written 12 books about roses. His *Rosor för nordiska trädgårdar* (Roses for Nordic gardens) in three volumes is the most important book about roses written for the Swedish and Nordic climate areas.

POM - Sweden's national programme for cultivated plant diversity

Background

To insure the long-term survival and sustainable use of cultivated plant resources, the **Swedish programme for cultivated plant diversity**, abbreviated POM in Swedish, was established. POM is developed on international agreements by UN (Convention on Biological Diversity 1992) and FAO (Global Plans of Action).

The programme was initiated by the Ministry of Agriculture in consultation with national authorities, organisations, the private sector and non-profit organisations active on the issues. Among these are NordGen (Nordic gene bank), some NGOs, botanical gardens, open-air museums, grower's associations as the Swedish Rose Society and many others. The Swedish University of Agricultural Sciences has the responsibility to co-ordinate POM's various activities.

POM is not only working with roses. All kind of ornamental plants as perennials, trees, shrubs, bulbs and pot plants as well as annual and perennial vegetables are parts of the programme. Today, there are, in all, 2200 cultivars of these plants in the Swedish Gene Bank at Alnarp, at the Swedish University of Agricultural Sciences.



Criteria

To be recognized by POM for further studies and conservation, a plant must have a documented history dating back before 1950. All plants of Swedish origin shall, independently of age, also be part of the Swedish National Gene Bank.

POM's areas of activities

The main tasks for POM can be summarized in the following headings:

1. Inventory, documentation of plant sites and collection
2. Evaluation and classification
 - 2a. Morphological studies
 - 2b. DNA-studies
 - 2c. Cultivated roses and their history in Sweden – sources of knowledge
 - 2d. Nordic cooperation
3. Conservation for the future – the National Gene Bank
4. Increasing the use of gene bank roses; propagation and introduction on the market
5. Information and publications

1. Inventory, documentation of plant sites and collection

The main active inventory work was carried out between 2005 and 2010. The inventory was carried out by 113 members of the Swedish Rose Society. Without participation from the Rose Society, Rose-POM would not have become what it is today. Many thanks to the Swedish Rose Society for excellent efforts! For all plant material POM educated 600 volunteers who participated in the inventories.

Many methods were used, but especially one showed to be very effective and of great public interest, the so-called "Come and Show Days", later called "The Rose Antiques Roadshow". We arranged them in 245 places around the country during the five-year inventory period. At these days growers came, displayed and told POM's experts about their old roses. Mostly it was possible for the surveyors to identify the roses by name. However, when the surveyors found an unknown rose according to POM's criteria it was collected for further studies.

Altogether approximately 15 000 roses were documented on inventory forms by POM's rose experts. Documentation giving information on the Swedish rose history were made of all kinds of documents – photographs, garden drawings, plant lists etc.

2. Evaluation and classification

To identify, classify and name old garden roses can be very difficult. The problems with finding the original names of older roses are many, and can not be fully discussed here! Only when experts in particularly critical Groups work together and we are using modern DNA technology to help, we can improve the overall knowledge of the garden roses, including their history and proper names, in accordance with the International Code of Nomenclature for Cultivated Plants (ICNCP).

1523 unidentified roses, or "Mystery Roses", of potential value and historical interest have been collected by POM for further studies and cultivation in a trial field.

All collected plants that meet the above mentioned criteria were placed for five years in temporary storage under similar growing conditions. This field trial is placed at Fredriksdal Open-Air Museum in Helsingborg. Here we can evaluate and compare all roses with each other and compare them with roses in reference collections.

During the evaluation period POM identifies the unique roses for the gene bank and eliminate duplicates. To accomplish this we use both traditional morphologic as well as genetic studies. The results are summarized in taxonomic conclusions.

Modern DNA techniques provide effective tools to see if two very similar type of roses are the same or different. The evaluation of the collected material shall be completed by the end of 2018 and the trial field will be completed in autumn 2018.

The project aims to use all reasonable means to seek possible original names for all roses in the gene bank. Despite all possible efforts to identify them, we expect that a number of them will remain unidentified. If we fail to unveil the original name, every rose will be given a new name when planted in the gene bank.

Classifying and naming POM roses when results from **both** morphological and genetic results have been achieved has proved to be a superior method of achieving safe classification.

When we failed to find a reference and only have access to literature and, in the best case, photographs and / or drawings, the classification, at least to some degree, becomes insecure. Unfortunately, descriptions often provide, but not always, an incomplete picture of the current rose, and sometimes available photos of the cultivar shows two or more closely related cultivars. Then, it is often difficult to determine which one is the right one. Yes, the naming of older roses is indeed very difficult. When POM does not know absolute conviction that a specific name is correct, we choose to create a new name, although we are convinced that the cultivar is most likely described in older literature.

2a. Morphological studies

Comparative cultivation, to cultivate under similar cultivation conditions, eliminate different environmental impacts on plants' characteristics. All plants develop very differently when they grow under different growing conditions in terms of climate, humidity, light conditions and the composition of the earth. In order to eliminate these differences the collected roses have been moved to the trial field where the cultivation conditions are as similar as possible. Comparative cultivations are necessary to ensure proper and comparable morphological characteristics.

The morphological studies in the trial field were carried out only after the plants became 4-5 years old. For all cultivars in the gene bank, all essential characteristics have been photographed against a 1 cm mesh grid. All cultivars have also been pressed.

2b. DNA-studies

In the first year of the genetic studies a DNA reference database was established for 120 well-known rose species, some key roses in the rose family tree and old garden roses that POM expected to be found during the inventory.

At the second step DNA-profiles were constructed for the accessions of "Mystery Roses" from the trial field at Fredriksdal. In this part of the work, so far, DNA profiles of 897 unknown accessions have been produced. Results from another 27 accessions will be presented in the near future.

The DNA-studies have been carried out in cooperation with Ulrika Carlsson-Nilsson, earlier on the The Swedish University of Agricultural Sciences, now on NordGen. The Microsatellite method with six markers has been used.

According to POMs dendrogram the 897 "Mystery roses" consists of 326 genotypes (cultivars) and 571 duplicates.

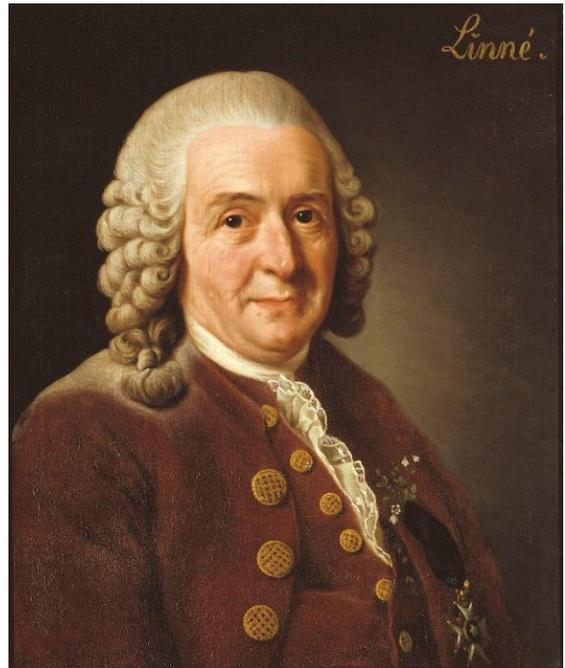
2c. Cultivated roses and their history in Sweden – sources of knowledge

Carl Linnaeus

Sweden has proud botanical traditions. Several internationally renowned botanists have produced groundbreaking works in their special areas. The internationally most famous and prominent Swedish botanist is Carl Linnaeus. He was born in Råshult in Småland in 1707 and died in Uppsala in 1778. Those who attend the conference's post-tour to Sweden will visit his birthplace in Råshult.

We all have Linnaeus to thank for several epoch-making efforts in both botany and zoology. Linnaeus is perhaps best known for his pioneering change of how plants and animals should be classified and named.

In *Systema Naturae*, 1735, he divided the plant kingdom into classes and arrangements according to the number and arrangement of stalks and pistils in the flower. This meant - for the first time - that the plant kingdom could be sorted and overviewed.



Linnaeus did not create and was not the first to use the so-called binary nomenclature in the naming of plants and animals. However, he was the first to consistently give all known organisms a scientific name. They consist of a family name and a species name, such as *Rosa canina* L.

The designation "L." after a Latin plant or animal name indicates that Linnaeus named it. In parentheses, we can also mention that our own species, *Homo sapiens*, was named by Linnaeus. This means that Linnaeus's remains are the lectotype for *Homo sapiens* L. because his description of the species was made on himself.

Before Linnaeus, so-called phrase names, a descriptive name in several words were used. They were often not the same by different botanists and nurseries. Caspar Bauhin's name for *Rosa canina* was "Rosa sylvestris vulgaris, flore odorato incarnate". In this context, it can also be emphasized that cultivar names, like 'Old Blush', began to be used only in the early 19th century.

For the plants Linnaeus introduced this change of plant names in *Species Plantarum* which describes 7 500 species. The first edition was published in 1753. By the end of his life and through the worldwide collections his disciples carried out, Linnaeus knew and had named 18,000 plant species.

Pehr Osbeck was one of Linnaeus's disciples. In 1750-1752 he traveled to China to collect plants. On October 29, 1751, he wrote in his diary about *Rosa indica* from Kanton. In our time, *Rosa indica* is known as 'Old Blush'. On returning to Sweden, Osbeck delivered 900 plant species to Linnaeus. This was the first time that a cultivar in the Chinensis Group was introduced in Europe.

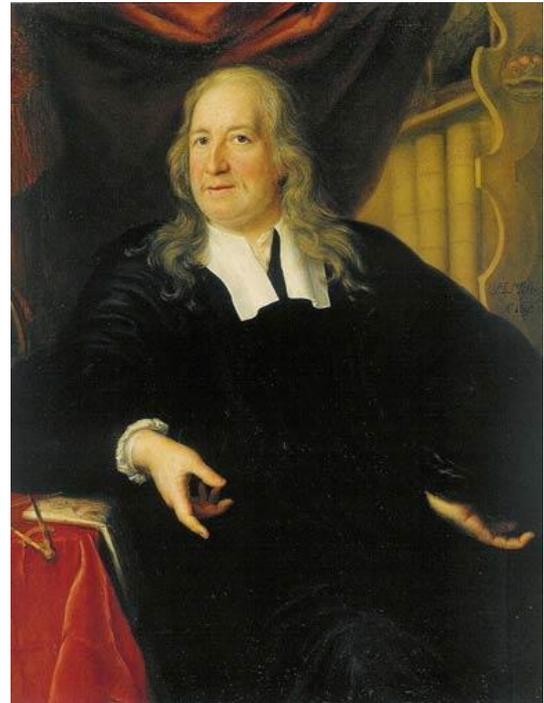
I would like to pay particular attention to some thoughtful sentences that Linnaeus wrote in the description of *Rosa indica* in *Species Plantarum*. Following the botanical description of the cultivar, Linnaeus inserts the following three sentences, in free translation:

"The Rose species are difficult to distinguish from each other and to characterize. It seems that nature has mixed several species with each other or on play made several species of one. Consequently, the one who has only seen few species can easily distinguish them from each other than the one who has seen several."

These three sentences are very interesting and an excellent example of Linnaeus's many artful comments, which are often quite unexpectedly appearing in his texts. When reading these sentences, keep in mind that Linnaeus lived during a time when the perception that God created all plants and animals was widely accepted, even by scientists. In these lines, however, Linnaeus seems to think something "different" than the Church's story of creation as the cause and explanation for the morphological variation that he observes in the rose genus, even though he saw only a few species.

I think Linnaeus was both marveled and surprised by the diversity of Roses, and it was obviously 'Old Blush' - one for Linnaeus morphologically very different cultivar compared to what he had seen before - which made him formulate these three sentences. The true, scientific explanation for his observations, Linnaeus never had to experience, because it took more than 100 years before Gregor Mendel and Charles Darwin made their discoveries about genetics and evolution!

There is also another description of Linnaeus's view on roses, that he was not particularly involved in the roses. Perhaps it may be true. In the first edition of *Species Plantarum* he describes 10 roses. In his herbarium, owned and managed by Linnean Society in London, there are 49 sheets with roses. 29 of them are indefinite, while 20 of them are named and consist of 14 species. It has to be considered as an unexpectedly low number of roses, partly in view of the fact that, 100 years before Linnaeus, at least 25 different roses were grown in his home town Uppsala, in Hortus Rudbeckianus.



Olof Rudbeck the elder

An interesting source of knowledge about the history of Swedish rose culture is Olof Rudbeck's overall botanical efforts. Rudbeck is often considered to be a universal genius, known as to have discovered the lymphatic system, which is considered to be Sweden's first significant scientific discovery. He also created an extensive botanical garden in Uppsala, in which he cultivated at least 25 different roses in the years 1658-1702, both Swedish and foreign wild roses as well as cultivars. The following roses deserve particular attention:

'Alba Maxima'
Rosa canina
Rosa dumalis
Rosa x centifolia
Rosa foetida
Rosa gallica

'Officinalis'
 'Rosa Mundi'
Rosa hemisphaerica 'Flore Plena'
Rosa majalis
 'Foecundissima'
Rosa pendulina

Rosa rubiginosa
Rosa sempervirens
Rosa spinosissima
Rosa villosa

With *Campus Elysii*, Rudbeck would write a flora with standardized naming and clear illustrations that could be used to identify plants. He wanted to surpass the most important flora of the day, Caspar Bauhin's *Pinax Theatri Botanici* from 1623, which was a compilation of the world's then 6000 known species. In this work, Bauhin presented the concepts species and genera.

In 1702 Olof Rudbeck suffered a terrible disaster when his magnificent botanical book project *Campus Elysii* was destroyed in the great city fire in Uppsala. A 25-year work that involved his entire family was destroyed in just a few hours. However, in a miraculous way, eleven volumes of hand-colored plant sketches could be

saved. These are called *Blomboken* ("The Flower book"). Along with planting lists from Rudbeck's botanical garden, *Blomboken* is the oldest and most detailed descriptions of cultivated roses in Sweden.



Rosa villosa L.

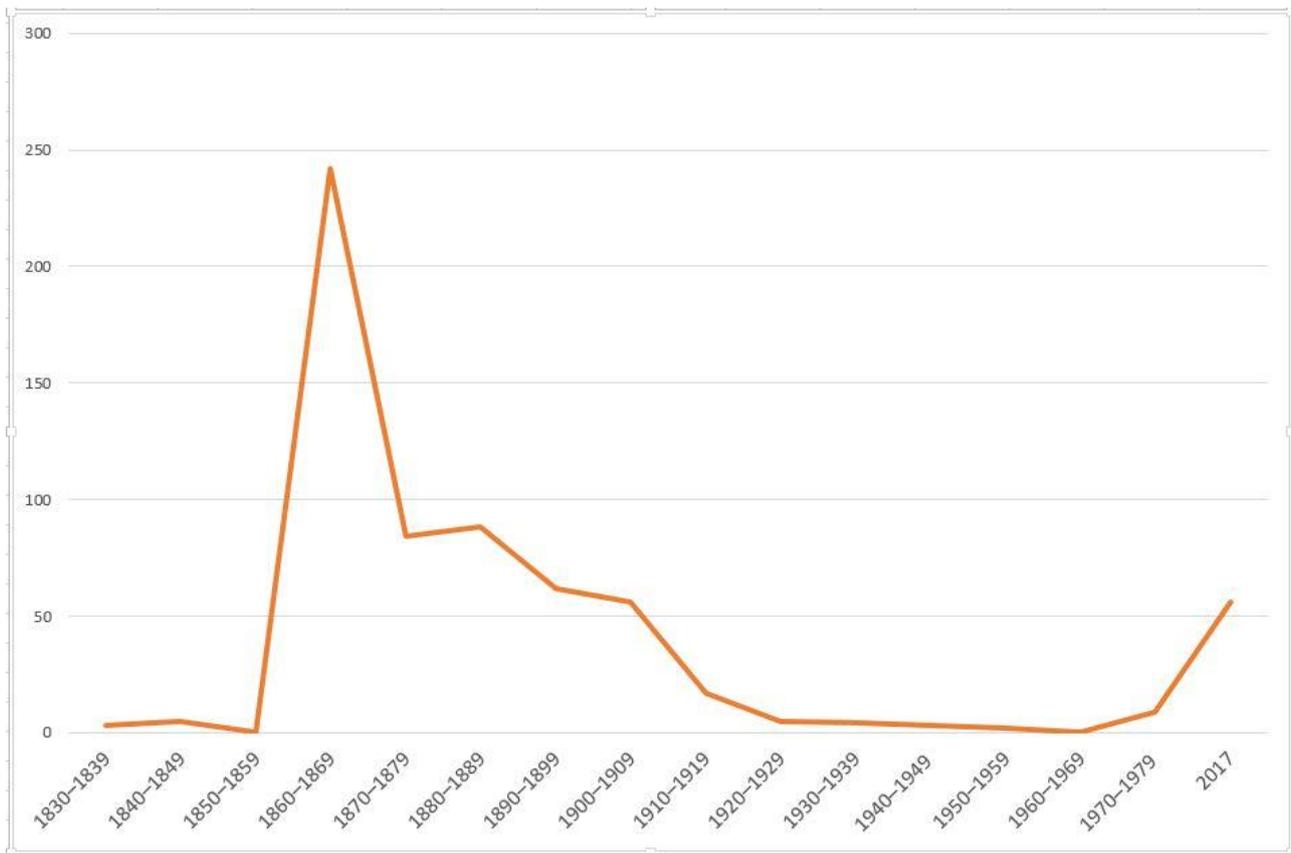


Rosa rubra

Garden literature, price-lists and rose gardens

Garden literature, floras and, in particular, price-lists of nurseries are important sources for finding knowledge of the history of Swedish roses. They provide answers to questions like which roses and groups were grown in Sweden and when and in which parts of the country they were marketed. This knowledge is valuable to have access to when unknown POM roses are to be classified. The roses in rose gardens in Sweden and abroad are important reference material in the classification work.

Through Irene Nettelbrants, one of POM's volunteers, patient work, POM has a database with more than 60,000 data from price-lists and rose literature. From this, a lot of knowledge about the Swedish rose history can be obtained. The following small example shows how many cultivars in the Gallica Group were sold over time in Sweden. The group's period of greatness in Sweden was in the period 1860-1890. The group fell completely into oblivion in the 1960s. Through Valdemar Petersen's work in Denmark and later by the Swedish nurseryman Lars Cedergren's care, Gallicas were reintroduced in Sweden in the 1970s, and today, at least 56 cultivars are sold in Swedish nurseries.



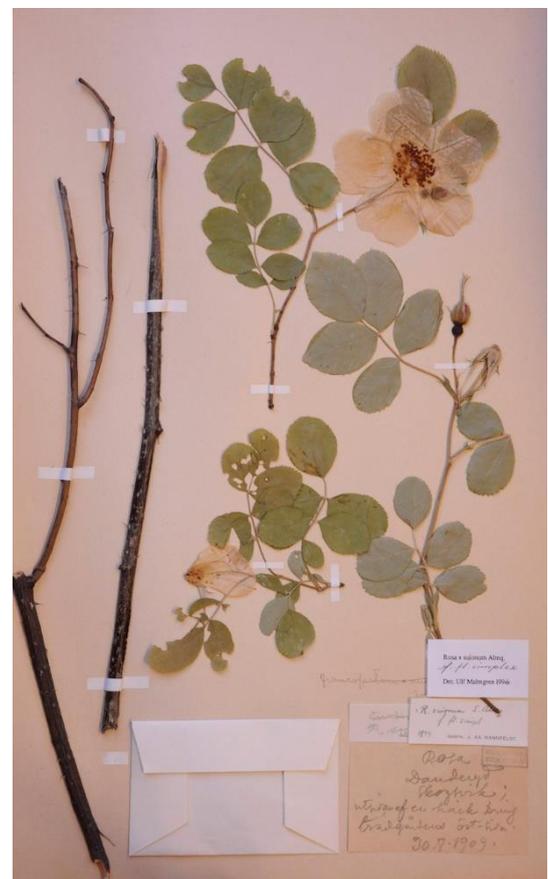
During the inventory, POM found many Gallicas, in several cases with a documented history from the time before 1900. 44 cultivars are preserved in the Swedish gene bank.

Studies in Swedish herbaria

In Sweden there are several significant herbaria, mainly in the oldest university cities. Thanks to studies by Eva Ståde, one of POM's volunteers, Henrik Morin, Assistant Project Manager, and the author of this article, most older Swedish herbarium sheets with roses have been documented and examined. One example is shown here, *Rosa x suionum*, collected north of Stockholm in 1918. From a taxonomic point of view, it is a very important rose with single flowers. Today, we do not know of a single living plant of it. Many-petalled forms of it are very common in several countries. The name currently used for the double form is 'Minette', a rose bred by Vibert 1819. In my opinion Vibert's 'Minette' is not identical to the many-petalled form of *Rosa x suionum*. The name 'Minette' should be replaced as soon as possible.

The garden-interested public

The greatest knowledge of the late history of Swedish rose culture is likely to be found in the older garden-interested public, primarily in older ladies. The older the ladies are the more knowledge of value for POM they have. There are many examples of how owners of cultivated roses could tell how individual roses have been inherited in families for several generations and how roses have moved long distances between different gardens



2d. Nordic cooperation

For many years, Sweden and Norway have partly worked together to study the cultivated roses of our countries, using similar methods, goals and timetables as regards inventory, evaluation and establishment of gene banks. We have compared our findings and, among other things, have found that many "Mystery Roses" of the same cultivar have been found in both countries. We have worked with both morphological studies and DNA analyzes. This year, the comparative morphological studies and ongoing DNA analyzes of 57 Norwegian and 27 Swedish samples will be completed.

At the initiative of and with the financial support of NordGen, 15 Finnish roses have also been DNA analyzed. The Norwegian and Finnish DNA studies are conducted in collaboration with POM and Ulrika Carlsson-Nilsson, NordGen. An important task of Nordic cooperation is to avoid creating two or more new cultivar names for the same rose.

On the initiative of Vilhjalmur Ludviksson, Iceland, DNA-studies of wild populations of *Rosa spinosissima* in Iceland, Norway and Denmark were carried out. A reference from the UK was included in the study. The results of this study is presented by Per Harald Salvesen at this conference.

In the near future, POM will deepen the DNA studies with our Norwegian colleagues Per Harald Salvesen, Eva Vike and Per Arvid Aasen. Several DNA methods will be studied and tested with the aim of seeking clear relationships between collected species and groups.

It is desirable and urgent to further deepen the cooperation between all Nordic countries on issues that are of interest to the Nordic rose culture.

3. Conservation for the future – the National Gene Bank

The most valuable and unique of the assortment of old Swedish garden roses will finally be conserved for the future in Sweden's National Gene Bank. It will consist of a central collection at The Swedish University of Agricultural Sciences in Alnarp. For added security duplicates will be planted in 17 local collections, or clone archives, spread around the country. All roses worth conserving are to be planted in the gene bank by 2018. 326 genotypes will be included in the national gene bank.

4. Increasing the use of gene bank roses; propagation and introduction on the market

The aim is to make all roses of the national gene bank available for everyone. The general public, scientists, breeders and nurseries will be able to request propagation material at minimal cost from the national gene bank.

Some of the very best roses will certainly be introduced/reintroduced on the market very soon. Distribution has already started. 8 POM-cultivars are on the market today. They are 'Valdemarsvik', 'Vaplan' and 'Professor Fagerlind' of the Spinosissima Group, 'Svea' and 'Järnvägaren' of the Damascena-Group, 'Blomsterhult' (Bourbon Group), 'Lövhult' (Foecundissima-Group) and 'Skeda' (unknown Group).



'Svea'

The current propagation plan includes another 46 cultivars that will be introduced in Swedish nurseries up to 2022.

The gene bank material also will be used as an element of enriching older cultural environments. When it is important to find relevant plant materials to buildings and gardens, typical for a specific time period, the plant material of the gene banks will prove very useful.

Hopefully, the roses also will be used in future plant breeding of new cultivars for the Nordic market and other countries with a cool temperate climate.

5. Information and publications

Already today some of the surveyors have published articles where they have described some of their rose foundlings, mostly in *Rosenbladet*, the member magazine of the Swedish Rose Society.

POM's scientific report will hopefully be published in 2019. In cooperation with Norwegian colleagues and Ulrika Carlsson-Nilsson, NordGen, separate classification articles build on DNA-results as well as morphological studies will be published in the near future.

More popular science articles will be published over the coming years.



'Professor Fagerlind'

Rose Riches in Finnish Gardens

Sirkka Juhanoja, Finland

Abstract

In Finland, there is a rich living heritage of roses irrespective of Finland's cold climate and short growing period. Our location between Russia and Sweden has presented us influences from both east and west and in case of roses, this can be seen in the choice of forms and in the gene pool. The first roses used as garden plants were native species and their forms with double flowers or different growth forms. Some of the forms have been named, e.g. *Rosa majalis* 'Tärnedal'.

Since the 19th century garden enthusiasts have imported many rose species to Finland. Only the hardiest species and cultivars have survived and some variation and mutation has taken place among them. As the result, there are interesting rose foundlings especially of *R. spinosissima*. Often the original names have disappeared. Since the 1980s the Finnish Rose Society and some research projects have collected hardy rose foundlings and renamed them. Due to this work there are many valuable hardy and beautiful roses in the production and for sale nowadays.

In Finland, the breeding programme of rose started in the 1990s at Helsinki University by the breeder Peter Joy. The aim was to develop hardy bush, ground covering and rambling rose cultivars with remontant flowering. As a result we have now 7 Finnish rose cultivars.

Hardy Finnish rose cultivars and rose foundlings are marketed with the trademark FinE. Finnish rose genetic resources are conserved in clone archives of the National Plant Genetic Resources Programme for Agriculture and Forestry.



CV

Sirkka Juhanoja

Lic.Sc. in botany at Turku University

Research scientist of landscaping plants in Natural Resources Institute Finland, Luke

Main subjects:

- Selecting and introducing the best Finnish perennials to the market and to use in public areas
- Clone selection of woody ornamentals and introducing them to the market, e.g. *Rosa spinosissima*
- Clone selection of rose foundlings
- Suitability of ground covering woody species to landscaping
- Plants for stormwater management areas
- Research and conservation of ornamental plant genetic resources: *Paeonia*, flower bulbs, herbaceous perennials, woody bushes
- Survey on valuable private plant collections
- Increasing public knowledge on alien species
- The trademark FinE

Member of the NordGen working group for fruits, berries and ornamentals

The Riches of Roses in Finnish Gardens

In Finland, there is a rich living heritage of roses irrespective of Finland's cold climate and short growing period. Our location between Russia and Sweden has presented us influences from both east and west and in case of roses, this can be seen in the choice of forms and in the gene pool. The first roses used as garden plants were native species and their forms with double flowers or different growth forms. Some of the forms have been named, e.g. *Rosa majalis* 'Tårnedal'.

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The species is not native in Finland, but many forms are well adapted to our climate and they are hardy enough for growing as far as in Rovaniemi area in northern Finland. The most common cultivar is "Finnish Double White", *Rosa spinosissima* 'Plena'.

Examples of rose foundlings in *Rosa Spinosissima* group:

'**Papula**' is a dense, thorny bush with small cup-shaped, semi-double pale-pink, fragrant flowers. It originates in Germany and was imported to Papula manor in Vyborg and distributed to southern Finland.

'**Juhannusmorsian**' ('Midsummer Bride') has an upright growth habit and semi-double pale-pink flowers, which become wholly open. It was found in southeastern Finland, in Elimäki. The origin is unknown, but nowadays it is produced in nurseries.

'**Ruskela**' is also a burnet rose. It is a vigorously growing bush with slightly larger leaflets than usual burnets, and the leaf colour is lightish green. The flowers are light pink, double, opening so that the yellow stamens are displayed. 'Ruskela' was found in southern Finland, but the origin is unknown. 'Ruskela' is available in nurseries.

'**Kerisalo**' is a very hardy rose with light pink, slightly double flowers and grey-green leaves. It flowers from late June to July. The hips are red. 'Kerisalo' is suggested to have arisen from a spontaneous crossing between a burnet rose and the local wild cinnamon rose. This rose was found in eastern Finland.

'**Kainuu**' is a very dense, low bush with small dark green leaves and single white flowers. It is the earliest burnet rose to flower. It was found in northeastern Finland in UKK National Park and the origin is unknown. This rose has got the name according to the northeastern province called Kainuu.

'**Linnanmäki**' has large creamy-white flowers with yellowish shades. 'Linnanmäki' opens its flowers a little later than other single-flowered burnets. The origin is unknown, and the bush was found in Helsinki.

Examples of rose foundlings in some other *Rosa* groups:

'**Toukoniitty**' is a Blanda hybrid, which was found in Toukoniitty park in Helsinki. It forms a very vigorous bush with almost thornless reddish stems. The bush can grow 2 m high. The flowers are light pink, loosely double. The autumn colour is splendid orange, and the dark red hips are abundant. 'Toukoniitty' is hardy even in northern Finland.

'Sanna' belongs to the *francofurtana* group. It forms a dense bush with light green leaves, double lilac-dark pink flowers with very thin petals and pear-shaped (turbinate) hips. 'Sanna' is very hardy and healthier than the better known *francofurtana* cultivar 'Agatha'. 'Sanna' was found in several places, mostly in the northern parts of the country.

'Olkkala' is a Gallica hybrid, which is very vigorous and healthy. It has dark reddish, sparsely thorned stems and simple, mid-pink flowers. It stays in flower for many weeks in July, and in autumn it bears a crop of dark red hips and a bright autumn colour. 'Olkkala' was found near an old manor house in southern Finland.

'Titin Tiltu' has traits of both Gallica and Rugosa roses. Flowers are single, and the dark red colour varies from season to season. The rose has grown for decades in eastern Finland, in Iitti, but the origin is unknown.

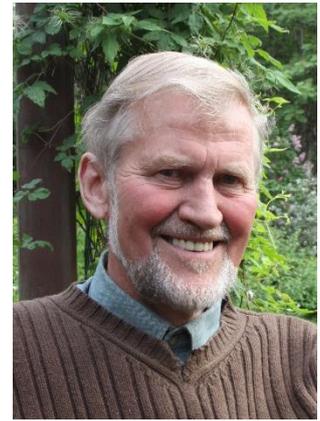
'Onni' ('Happiness') is a hardy Centifolia hybrid, it was found in Rovaniemi, northern Finland. It has fairly small double, light pink flowers. The uppermost branches are almost thornless.

'Pappilan Neito' ('Parsonage Maid') belongs to Rugosa group. The loosely double flowers are white and scented. This rose was found in a village, where it was called "White Hansa". In recent years, the diversity of Finnish roses has increased by rose cultivars bred in Finland.



Roses for Cold, Wet and Windy Gardens

Vilhjálmur Lúðvíksson, Iceland



Abstract

- Why grow roses in Iceland? Natural occurrence of roses!
- The setting for growing roses - cold, wet and windy! Early disappointments.
- The role and goals of the Rose Club established in 2002 under the umbrella of the Icelandic Horticultural society.
- Iceland does not offer a favorable environment for rose gardening. The challenges - the limits and possibilities - of geographical (latitudinal), climatic and geological environment will be described.
- Comparisons with conditions in the Nordic Countries and the Canadian Prairies. Relation to hardiness zoning will be presented and their limitations discussed.
- Just over 1200 species and varieties of roses imported to Iceland in the 20th century up to the present. Where do our roses come from?
- The problem of selecting and testing genetic materials (species and varieties) from various parts of the World will be discussed.
- The importance of international (Nordic and Canadian) contacts and cooperation. The Nordic and Canadian genetic heritage in roses applied in Iceland. The outcome of trials - by main categories and groups of roses. Examples of successful rose introductions, species and varieties, hardy roses and some tender roses will be presented in pictures!
- Examples of locally bred and developed varieties and their breeders introduced.
- Prospects for the future of rose cultivation in Iceland!

CV

Vilhjálmur Lúðvíksson

Born: 1940 in Reykjavík, Iceland

Married: Dr Áslaug Sverrisdóttir, historian, with two daughters.

Chemical Engineer: Ph. D in 1968 from University of Wisconsin, Madison.

Professional career:

- Industrial development, natural resource development and science policy planning 1968-1978.
- Director (CEO) of the Icelandic Research Council from 1978 to 2003.
- Director for the Office of Science and Universities in the Ministry of Education, Science and Culture 2003-2010.

International engagement: Representing Iceland in European (EU) and Nordic cooperation in science and technology as well as the Committee for Science and Technology Policy of OECD from 1978 -2010.

Lifelong interest: in outdoor sports (fishing and hunting), nature conservation, forestry, land reclamation and horticulture, including introduction of roses, rhododendrons, ornamental trees and fruit trees into Iceland.

Membership on the boards and councils of several prominent organizations (NGOs) in above listed fields.

President of the Horticultural Society of Iceland 2007-2013.

Chairman of the Rose Club of IHS 2012- present.

Roses for Cold, Wet and Windy Gardens

Chairman - Dear Rose Friends

Why grow roses in Iceland? (Slide 2)

What?!! - Roses in Iceland? - **Are you serious?**

Well - The proposition of growing such warmth and sun loving creatures as roses in a country named Iceland is not a very convincing concept. There seem inherent contradictions in such project! - **And nature seems to support that opinion!**

(Slides 3 and 4) My own **my source of experience, challenge, inspiration and experience** in rose cultivation is based on starting to grow roses in a location - with a soil that was degraded by centuries of sheep farming and erosion. Here are some photos taken before and after! NOW roses, fruit trees and flowering shrubs are growing in the shelter of trees and the soil has been re-constituted. These are my credentials for speaking to you!

(Slide 5) Botanical knowledge on the natural distribution of roses in Iceland tells us that there are only two species of the genus growing in six geographically widely distant places in Iceland. In five location they are identified as *Rosa spinosissima* L. and in one case a *Rosa dumalis* Bechst. They were first recognised as roses by one of our early naturalists in the late 18th century. Interestingly it has recently been shown by DNA analysis that there is actually only one individual plant - **one genetically unique individual clone - growing in each of these places!** Thus it seems they have never been able to reproduce sexually - **the poor things!** - and each plant has been living hermetically on its own for centuries, possibly thousands of years!

Nature does not seem to have been very encouraging for sexual activity among roses in Iceland! Of course you may need two different individuals to produce fertile seeds as many species of the Rose family are self-infertile. However these plants have been able to survive and spread vegetatively by suckers over substantial areas - **in one case up to about 13 ha or 32,5 acres! That's a lot of one rose!**

But - they have not had any chance of adaptation through sexual reproduction and natural selection so they regularly suffer winter damage and have to abandon any dreams of flowering and produce hips - which when they do come - **are infertile anyway!**

(Slide 6) How did these plants come to Iceland in the first place? Were the individual seeds carried by birds? Were they carried by ocean currents as floating debris from the Continents during the great floods at the end of the Ice Age? Or was each plant possibly brought by a Celtic hermit monk, - **the ascetic disciples of the sailor monk St. Brendan** long before the Nordic settlement of Iceland? It is known from Irish records that they did find Iceland and stayed at least temporarily two hundred years before the viking explorers and settlers came! It is also known that the rose or **the thornbush** - as it was often called, was considered a necessary accessory in the practice of early Christian ascetic movements to be used i.a. when the desires of the flesh became overwhelming! Thus the legend of St Benedict living as an ascetic hermit in the Cave of Subiogo

near Rome tells us that he had to cast himself on the thornbush to quell his fleshly desires when he started to have wet dreams! Thereafter the Thornbush adorns many of his Icon pictures.

But we, the protestants and non-believers now inhabiting Iceland, are free from these fetters on human desires and have become accustomed to coping with a harsh environment. Therefore we have decided to try our creative hands and minds at growing exotic things there, - **including lovely roses!!**

The setting for growing roses - cold, wet and windy! Early disappointments.

(Slides 7 and 8) The Icelandic Horticultural Society was established in 1885 for the purpose of promoting gardening and the culture of edible and ornamental plants in Iceland. The emphasis in the beginning was on plants useful for the kitchen and healthy diets, - later on ornamental plants and shrubs. But it was not until this century that the focus was seriously turned to roses, partly because of long standing disappointments with the decorative, fancy hybrid tea roses or bed-roses we had imported, - mostly from the main rose producers of Denmark and Germany. Therefore a special Rose Club was formed inside the IHS in 2002 to concentrate on an effort by the most dedicated members to test selected, imported roses, document their performance and develop ways to grow roses successfully in our difficult environment.

Since then the Club has fairly systematically studied and imported hardy looking or hardiness rated roses for its members and followed their success. It also has established 3 rose gardens under different local microclimatic settings and followed the performance of the roses there. I am basing my presentation on the experience thus gathered as well as my own experimentation.

The environment for rose growing

(Slide 11) The geographic and geological setting of Iceland broadly determines the conditions for growing roses there. The most determining factor, of course, is the climate. For geographical reasons it is most relevant to compare ourselves on one hand with our neighbouring Nordic Countries - and the Canadian Prairie Provinces on the other. This has been a successful strategy!

(Slide 12-13) However, if we look at the annual cycles in temperatures Iceland enjoys - or rather suffers - a widely different situation emerges as compared to these geographical regions. This can be seen in the graph here. What stands out are the and relatively **mild winter temperatures** and the **low summer temperatures**.

Average high temperatures in July are about 12°C for Reykjavik as compared to 16-17 °C for Nordic Capitals and Edmonton, Alberta but nearly 19°C for Saskatoon, Saskatchewan. If growth starts at 5 °C this means 7 useful degrees for Reykjavik but 11-12 for the Nordic Capitals and Edmonton and 14 useful degrees for Saskatoon. Thus roses in Reykjavik receive less than half the thermal energy enjoyed by roses in other Northern capitals shown here.

One more factor that comes into play is the sunshine itself and the rays needed for proper blooming and opening of the flowers. On this score the South of Iceland is on the losing side, in particular compared to the Canadian Prairies. Occasionally **the Sun** seems to ignore us altogether and both men and flowers suffer as a result. We have even a record over the quality of the

summer seasons to show this. **(Slide 14)** An enterprising meteorologist of our Met Office by the name of Trausti Jónsson has established a composite index based on measures of daily temperatures, sunshine, rain and wind - for the days that **Icelanders think are good enough to have an outdoor grill in the afternoon when they return home from work!** It actually is a rather convincing measure of good weather also for roses!

It shows quite vividly what our summers have looked like over the last 90 years seen from **the viewpoint of men and roses!** As you can see the years after the turn of the century have shown steady improvement with the notable exception of 2013 which was absolutely miserable for men and roses - **but** - provided a singular opportunity to find out which roses really could take our climate! You will also note that 1983 was even worse and 1955 not so nice either. The climatic pattern here largely explains the disappointments we have had with roses over a long time - but now Global Warming raises our hopes that we will gradually develop as a rose-growing nation!

Where do our roses come from?

Hardiness of plants is generally linked to **winter survival**, i.e. the lowest temperatures at which the plant can survive. The hardier the plants - the lower the winter temperature they can survive. In our more complicated climate the winter temperatures rarely touch the toughest hardiness scale of plants in the Northern Hemisphere. But on the other hand the summer temperature - and the length and the quality of the growing season is really problematic. **(Slide 14)** Therefore hardiness maps for N- America and for the other Nordic Countries and their relation to the hardiness rating of roses are not sufficiently informative.

Thus we have to make our own tests - and we have had many surprises when roses marked as extremely hardy have turned out to be **-not so hardy** - and others considered tender or moderately hardy have performed unexpectedly well with us.

Very broadly speaking our experience with the rating of roses according to published hardiness classification - Iceland seems to lie near **Zone 5-6** or higher in the Swedish zone map and **Zone 3-5** or lower in the North American USDA zone map. There are however important exceptions where roses rated as less hardy perform well and vice versa. In addition, individual locations and local microclimates really matter!

(Slide 15) Given our geographic position in the world it is no wonder that we have in general benefitted most from our Nordic rose loving colleagues whom we have been in close contact with since meeting them for the first time in 2006 in Denmark and subsequently becoming members of the Nordic Rose Society. The importance of finding super- hardy varieties was brought on to us by the Finnish friends we met there and visited them the year after. Equally we were fortunate to start having access to some of the Canadian rose varieties from Central Experimental Farm in Ottawa and Morden Manitoba in the late eighties when the first imports from there became available. Interest gradually increased in their origins and appreciation of their genetic differences on their behaviour in our Icelandic environment.

(Slide 16) There was some sort of breakthrough in 2014 and 2015 with contacts established with rose experts and enthusiasts from Canada which led to deeper understanding and appreciation for the remarkable work of the plant breeding pioneers that settled in the Canadian Prairies in the late 19th and early 20th century. We are today benefitting enormously from their work in our

attempts to grow hardy fruit, berries, flowering shrubs and roses and have only just begun trying out the materials from the Prairie Provinces.

There have been just over 1200 species and varieties of roses imported to Iceland in the 20th century up to the present. The Rose Club itself has offered about 450 different imported varieties to its members since its formation in 2002. This has been done partly through arrangements with local nurseries and partly imported directly according to the Club's own trial strategy. We have recently conducted a survey of the outcome of these roses and I speak partly from that experience.

(Slide 17) In summary our experience is the following:

The Challenge :

Summers windy, wet and cold for blooming and maturing of roses!

The volcanic and wind eroded soil can present some problems

The Advantage:

Less problems with plant diseases.

Long flowering period

Lessons from trials:

You just have to try. You cannot rely on hardiness information from other countries!

Note:

All our trials are without winter cover!

(Slide 18)

Turning to the roses themselves I will now show some slides to summarise our experience with trying to grow roses. I shall be indicating with the colours of the letters in their names how the roses have turned out. **Red colour** in name indicates that the rose has proven hardy, healthy and floriferous - even during the difficult years of 2013 and 2014. **Green colour** indicates that the roses thrive fairly well but may be late in blooming and were sensitive to the cold years in 2013 and 2014 especially in 2013. **Blue colour** in a name that the **rose does not grow satisfactorily outdoors and may be unsuitable for our climatic conditions.**

Keeping in mind the message in these three colours of the names I shall go fairly rapidly through our experience showing a fair number of pictures of rose subgenera, rose sections and species and named roses as I go. I hope you can follow this with the help of the colours.

The general picture for different rose classes is as follows:

(Slide 19) My first slide shows how the different subgenera of roses and the sections within the subgenera within them seem to perform under Icelandic conditions. Not unexpectedly it is the Eurosa subgenus which contains the most subsections which give viable species. The species and varieties that fall under the sections spinosissimae, caninae, carolinae, and cinnamomeae show the best performance while the Gallicanae and Synstyleae are more sensitive but can be grown with some effort under good conditions. The remaining classes within the Eurosa and the remaining subgenera do not grow well in Iceland. This shows that the popular tea hybrids, hybrid chinas and most of the polyantha and floribunda varieties do not do well in Iceland.

(Slide 20) The next slide shows this according to a somewhat simplified but traditional classification of garden roses into **Old roses**, **Modern roses** (after 1847) and in both cases a simplified division into shrub roses, climbers and bed roses. I realise that I am treading on dangerous ground with this classification but it helps to presenting a general overview of the situation of rose growing in our country.

(Slide 21) As can see from this picture the situation calls for a lot of discussion amongst us rose lovers. Here my wife took a picture of me and some of my experimental roses in pots on my garden patio while I conferred with my friend Jóhann Pálsson who is with us here today. **As you can see this is very serious!**

(Slide 22-27) Wild species roses and their closely related varieties generally do fairly well in Iceland. Especially those provenances that originate from high mountains in Europe such as, N-America and Asia. *Rosa pendulina*, *canina*, *rugosa*, *nitida*, *nutkana*, *californica* '**plena**', *setigera*, and *setipoda* to name a few. Of the tall growing Asian roses the *R. moyesii*, *dauidii*, and *sweginzovii* have all done very well, even in the wettest and coldest summers. They have started early to flower and produced their picturesque flask shaped hips in mid-August for a good late summer show and attraction for the thrushes and black birds to stay over! *Rosa canina* in its wild form does quite well in Iceland but most of its modern and complex varieties are not particularly hardy.

(Slide 28-29) Some of the best-known **Alba roses** do well in good years. 'Maidens Blush' is widely distributed and produces its lovely flowers in a normal sunny summer. But it is not happy when it's cold and rainy. Same thing can be said about *R. x alba* 'Maxima' and the lovely 'Celestial' which in good summers produces - to my mind - the most beautiful of all rose flowers. We have recently had very good experience with an old alba-rose named 'Blanche de Belgique'. It is much more reliable a bloomer than the popular 'Maxima', very fragrant and does not seem to be affected at all by rain. It has a long flowering period but tends to retain its spent flower petals and needs regular deadheading to be tidy. Based on our experience we can recommend this rose for difficult situations northern locations.

(Slide 30) The **gallicas** generally seem to be more on the margin of tolerating our cool summers and variable winters. Those that do well are rather an exception and some can give pleasing results with good care. 'Tuscany' and 'Versicolor' have been most popular. The closely related class of *R. x francofurtana* roses does better and the well-known and widely loved *R. x francofurthana* 'Frankfurt' - often called *Rosa gallica* 'Splendens' - seems to be nearly completely hardy and always produces flowers even in cold and wet summer and difficult soils. The Apothecary rose, *Rosa gallica* 'Officinalis' is much more sensitive and needs winter protection to show its wonderful flowers.

(Slide 31) Rather surprisingly the ***R. rubiginosa*** and most of its derivatives with the exception of 'Magnifica' have not performed well in Iceland. I was very disappointed when the young apple rose I bought during the Nordic Rose Weekend in Norway in 2008 from the mediaeval Cathedral of Hamar in Gudbrandsdalen died in its first year. **I was so looking forward** to experience its legendary scent of the famous "*Angel-thorn*" - so romantically described in the Cronicles of the Hamar Bishopry in the 13th Century!

Turning now to the successes.

(Slide 32-33) The rugosa roses and their closely related bred roses generally grow and bloom well in Iceland - **in fact often very well!** The complex breeds that have derived from them are among the hardiest and longest lasting ornamental shrubs we find. The '**Hansa**' has of course been the earliest success and is widely spread in public and private gardens. It is the variety of rose that sells in largest number in our garden centres. '**Fru Dagmar Hastrup**' is another example which delights the eye all summer and into late fall with its flowers, deep red hips and colorful foliage. **But lately the many Canadian cultivars with R.rugosa genes in their blood have shown their mettle. I shall come to that later.**

(Slide 34) The spinosissima group is generally considered among the hardiest of roses. However many well-known spinosissima varieties do not take kindly to cold and wet summers. They really love and need sunny summers. There are however very important exceptions and some that have emerged from found roses and breeding in Finland and Sweden do surprisingly well. During our first participation in the Nordic Roseweekend in Denmark in 2006 we came into contacts with a few Finnish rose-lovers and their Swedish friend, - the late Gunnar Ståhl. They told us about a whole new selection of roses that had proved hardy under difficult situations in those countries, particularly after the global climatic change had started to produce late winter warm periods and subsequent cold spells which proved disastrous for many of the previously popular varieties. **The hardy survivors of such reality tests have become truly interesting to us!**

(Slide 35 - 43) We visited Finland in 2007 and at the end of that visit we ordered some 22 varieties to be rooted for us by a Finnish nursery for delivery the following spring. This was very successful. Many of those rose varieties are now prominent in our rose gardens!

From our Nordic relatives we have found the Danish spinosissima variety, 'Aicha' by Valdimar Petersen to be both hardy and spectacularly floriferous although preferring sunny places. His Rosa davidii 'Fenja' has also come out very strong. The Swedish spinosissima variety 'Huldra' by Evert Nilsson has proven very hardy and rain tolerant as well as long flowering in our cool summers. The Finnish spinosissima 'Linnanmäki' (or 'Linnanmäen Kaunotar'), sometimes attributed to Bengt Schalin, the late chief gardener of Helsingfors, has also proven exceptionally hardy and floriferous with its large, perfectly shaped, single, cream white flowers and colourful foliage in the late fall - with recurrent flowering and fully ripe hips at the same time.

Many other Finnish roses have proved their mettle in Iceland, both the found roses like 'Ristinummi', 'Kerisalo' and 'Ruskela' although the latter two are somewhat rain sensitive they put on a wonderful show on sunny days.

Several of the roses of the naturalised Scotsman and rosebreeder Peter Joy and his associates have proven both hardy and floriferous - most notably the Buck rose hybrid 'Lumo' but also the spinosissima 'Tove Jansson' and the hybrid rugosa sister plants 'Sointu' and 'Sävel'. The prolific rose breeder-lady Pirjo Rautio has produced many gallica hybrids some of which we are currently testing. Her variety 'Aliénor d'Aquitaine' looks interesting at the moment and we also have high hopes for 'Merveille'. Pirjo has also produced a beautiful small spinosissima which she calls 'Marsipan' which has proven hardy extremely floriferous in our gardens.

(Slide 44 - 54) There was another turning point when we began to have access to the many varieties that emerged from the work of the early Canadian Rose-makers, -as Harry McGee of

Roses-Canada called them, - who did their breeding work to meet the harsh climate of the Canadian Prairie Provinces. Thus many of the roses of Frank Skinner, Georges Bugnet, Robert Simonet, Percy Wright, John Wallace, William Godfrey and Felicitas Svejda have done extremely well with us.

To name a few: The Skinner roses 'Wasagaming' and 'George Will' are quite common in our gardens; the Bugnet roses, 'Louise', 'Marie', and 'Therese Bugnet', as well as 'Lac Majeau' have become very popular and John Wallace's, 'Kakwa' probably gives the most spectacular flush of rain tolerant, well filled, scented white flowers of any spinosissima rose we have ever tried. It seems as the climate excesses of Prairie Provinces that dictated the selection of these varieties have **introduced a broader range of hardship tolerance to these them than would be expected on beforehand.**

Thanks to them we have also now found a quite large number of rose varieties, especially among the Explorer series of roses, that perform well in our climate- despite the very great difference between the extremes of very cold winters and hot and dry summers in the Prairie Provinces as opposed to our own mild winters and cool and wet summers. The Parkland series from Morden Experimental Farm is less successful in that the roses require higher temperatures than we can offer to bloom properly - although they are root-hardy in Iceland.

(Slide 55) The Artist series that came out of Agriculture Canada programs with Bill Reid and Campfire in the lead, however, have performed very well so-far. We are waiting to try the new series with 'Canadian Shield', 'Michel Trudeau' and 'Never alone' and Oscar Peterson' as they become available in Europe.

(Slide 56) As I indicated at the beginning of my talk the generally the highly bred bed-roses which are most popular in warmer climates and predominate in the sales of roses in the market do not thrive well in our climate. This goes especially for the hybrid perpetual roses and those that have china tea-rose blood in them. But also, - unfortunately for us - the various classes of old roses; the damasks, the centifolias, the bourbons, the portlands and noisettes, the moschatas, the foetidias and their bifera relatives. None of them are doing well in general - although some keen growers have some, perhaps temporary, success with individual varieties among them. We had high hopes for a while with a rose we saw in Finland in 2007 then called "Thatitorninkatu" or "Observatory Street" for the location of its finding- later identified as olda and the venerable 'Blush Damask' but it only really flowers in the best of summers. I have some reports of success with 'St. Nicolas'.

(Slides 57-59) The selection of **climbers** we have found is limited as well. But there are a few doing surprisingly well and others we can pretend they are climbers by appropriate encouragement. Here are some of them. The hardest by far it the Finnish variety Polstjärnan, - quite reliable in our climate. 'Flammentanz' needs a sheltered and warm spot as do the Danish beauties Helena roses 'Lykkefynd' and 'Hybrida'. We can train the very hardy, vigorous and floriferous Norwegian rose 'Hurdalsrose' to serve as a climber and the same goes for 'Martin Frobisher' and 'New Dawn' which can grow to well over 2 m in the open and flower summer long. More recently a Swedish Helenae rose introduction, 'Ydrerosen' has shown it to be exceedingly floriferous and hardy in our climate.

(Slide 60) A total surprise to me was to raise from a cutting I picked in Norway in 2008 a lovely rose that I thought was a *R. helenae* variety but turned out to be the well-known 'Brend Colvin', an offspring of the *Rosa filipes*, which according to its official hardiness rating should die in its first winter in Iceland! Look what it was doing in the rain and wind up there last summer!! And this is a fairly exposed position!

(Slides 61) The selection of rose that behave like low growing bed roses is limited indeed. Here are a few which with some encouragement and appropriate pruning can be made to look nice. They are moderately hardy but survive most winters and the following spring cruelty.

(Slides 62-65)

Interestingly enough though, there have been encouraging results in recent years with some varieties among of the English Roses bred by David Austin. Although many of his varieties do not take readily to the Icelandic climate has to offer, there are varieties that seem to adapt better than others if given a little extra care. That care seems to be warranted in view of their long blooming period, fragrance and remarkable shapes and colours. The improving climate in recent years may be helping us. They actually are doing better in Iceland than the Old Roses that they are supposed to imitate!

Examples of locally bred and developed varieties introduced.

(Slide 66) There are examples of roses bred or emerging in Iceland that have reached the international market. The first ones came from seeds obtained from foreign botanical gardens under certain names but then turned out to be quite far removed from the name of the supposed mother plants and clearly the result of open pollination - a mixup. Here we have the examples of 'Yndisrósín', which reminds me of the Canadian 'Metis' from Bert Harp at Morden and is probably also a *R. nitida* hybrid. Then there is our very popular 'Skotta' which came from a seed packet from the Wageningen Botanical Garden marked 'Betty Bland'. But it turns out to be a rugosa type variety and rather far removed from *R. blanda*. It is very hardy and floriferous but sterile and spreads heavily by suckers. Both of these roses emerged from seeds at the Reykjavik Botanical Gardens and were later introduced to gardens in Iceland.

A third rose that came from the RBG is the lovely 'Katrín Viðar', a spinosissima rose that emerged from seeds received from a now discontinued botanical garden in Northern Russia. One more spinosissima was selected by then aspiring gardener, Ólafur S Njálsson from imported seeds of *R. spinosissima* var *Altaica* and given name 'Lovísa' in honor of the breeder's mother. All of these rose varieties are now available at Rosenposten here in Denmark.

(Slide 67) The former head of the Reykjavik Botanical Gardens, Jóhann Pálsson, started his own rose crossings and selection in the early 90s. He started by selecting young plants from open pollination seedlings of proven varieties in his own garden like 'Rotes Meer' or wild hardy roses like *R. x kamtchatica*. In other cases controlled pollination between Canadian Explorer varieties like 'Charles Albanel' and 'Henry Hudson' would give good results. In various cases suitable mother plants fertilized with pollen from especially hardy roses like *R. pendulina*, *R. x kamtchatica*, *Rosa x francofurthana* 'Frankfurt' and in one case 'Prairie Dawn'.

(Slide 68-69) In the late 90s about a dozen back crosses were done and in 2001 and 2002 a large number of new seedlings from these were planted in an open spot in one of the City open areas. Many of these gave quite interesting new varieties and a number have recently been selected and are being propagated both by private nurseries and the City of Reykjavik Nurseries for planting in public places. Some of the earlier crosses have drawn attention by our Nordic rose friends and are now available from Rosenposten. I would in particular draw attention to the following: 'Logafold', 'Drífa', 'Hilda', 'Guðfinna' and 'Hrefna Kristín'.



'Logafold'



'Hrefna Kristín'

Some of these can be seen in the Icelandic rose-bed in the Nordic collection in Valby Park that we shall visit to-morrow. And there are some new ones on the way from Jóhann Pálsson who continues his work, now in his late eighties and is with us here at the WRC. His work has stimulated some other amateurs, like the one speaking, to do his own breeding and selections - although there are no international breakthroughs as yet!

- **Prospects for the future of rose breeding in Iceland!**

(Slide 70) The problem with plant breeding in Iceland is the very small market which does not really draw - or even justify commercial interest, - **and certainly not commercial rose breeding**. It is the stuff of voluntary or hobby activity, which of course is not to be underestimated as the examples of the *Canadian Prairie Rose-Makers* prove. Like them - Icelanders have a good reason to encourage such work by self-educated amateurs. The Horticultural Society of Iceland has in recent years tried to do so and the example of Jóhann Pálsson's successful work really shows the way.

To raise our optimism we are also seeing more and more attractive rose varieties emerge from the rose testing of our Rose Club as potential breeding parents for such work. These can with luck and some strategic thinking reasonably be expected to produce seedlings that will be exposed to the Icelandic environment and through testing and selection expand our choice of hardy varieties that can please our senses in the garden.

(Slide 71) Thank you for listening!

Fifty Glorious Years (1968-2018)
Celebrating the WFRS Golden Jubilee
Tommy Cairns, USA



Abstract

Fifty years is a major milestone of achievement for any organization. The WFRS jubilee celebration is not so much a golden opportunity for festivities, but perhaps also a solemn occasion to pause and relive with great pride at many memorable journeys over the last 50 years. Relive the convergence of people, events, technology and locations that ultimately shaped the final crystallization of the WFRS.

In 1968 our founders set out to improve the world of roses by developing a global community without conventional boundaries bringing into closer harmony the lives of rose growers everywhere. Gaining the respect not only for the establishment of international camaraderie, but also for the global promotion of the joy of growing roses was the WFRS mission.

Our first 50 years have been incredible with people, places and conferences populating our daily lives with roses in sharp focus. This illustrated presentation honors the visionaries who made those first footprints in 1968 tracing through time the advancements WFRS has made towards providing service to one of Nature's greatest gifts to humanity, "The Rose" and the profound effect on the behavior of civilization.

The WFRS has lived the first fifty years during what has been best described as "The Golden Age of Roses" - a time span whereby rose breeding became an honorable professional career giving the world the wonderful creations of thousands of varieties to suit every taste. Roses have become the world's favorite flower form. Entrusted with this legacy the WFRS has expanded its outreach to 40 Member Countries providing stronger communication between Nations. This is a remarkable story proudly chronicles those WFRS events that shaped the organization in its mission to serve the common good through innovative achievements and sheer volunteer passion.

CV

Dr. Tommy Cairns, is an internationally renowned author, rose expert, and successful exhibitor. He has judged international rose shows in South America, Africa, New Zealand, Australia, Japan and Europe. Tommy served as the 50th President of the American Rose Society in 2000-2003. He was editor of both Modern Roses 10 and Modern Roses XI - THE WORLD ENCYCLOPEDIA OF ROSES and was Editor of World Rose News for 12 years. His literary efforts have been chronicled in Botanica's Roses and in a series of popular books, namely All About Roses, All About The Easiest Roses to Grow, and The Complete Guide to Roses, published by Ortho/Meredith Books, and The Ultimate Rose Book, published by Abrams, New York. In 2002 Tommy pioneered the publication of World Rose News as a full color hardcopy mailed to all member countries. In 2009 he was honored by WFRS as Editor Emeritus. At his home in Studio City, California Dr. Cairns enjoys almost 1,000 award-winning rose bushes, which he competitively exhibits on an international level in several continents. Professionally Dr. Cairns is the Scientific Director/Forensic Toxicologist for the Psychomedics Corporation in Culver City, California. He is Scottish born and holds a PhD in Chemistry and Doctor of Science degree (DSc) in Toxicology, Biochemistry, Art Conservation and Archaeology from the University of Glasgow, Scotland.

50 Glorious Years - Celebrating the WFRS Golden Jubilee 1968 - 2018

*“Roses belong to the whole world
and before them vanish the barriers of nationality”*

Dr. Tommy Cairns (RoseWorld '94, New Zealand)

Retrospectively archiving historical events throughout our past 50 years is a daunting task. When you are indeed an integral part of that creation in some way, current awareness of actually making history is usually non-existent to the individual. But the significance of progress made becomes WFRS history with great pride and joy. Since its founding in 1968 WFRS has demonstrated exemplary success in establishing an organization of truly remarkable strength and outreach - 40 Member Countries spanning the globe! Achievements in management and representation have evolved with the passing of time, but it is the effects of our existence on peoples lives that shine even more brightly. In recounting the events of the past 50 glorious years beautifully chronicled in the book, “WFRS 50 Golden Years”, the documentation provides a vast archival store of knowledge and images to satisfy even the intensely curious.



Like all good stories, however, it is often wise advice to travel back in time to our beginnings. But our particular story stretches back far beyond 1968. What were the compelling events prior to 1968 that caused our brave founders to become “Rose Evangelists to the World”? This portion of the presentation can best be described as profound historical convergence. History has beautifully recorded the sequence of these magical elements that ultimately crystallized our human instincts to share passion for “The Rose” with others, no matter how near or far away in distant countries.

Included in this segment of the presentation the exerted power of historical convergence of people, places and abiding passion include the roles played by the English East India Company (UK) with 19th century trading with Canton, China resulting in the introduction of recurrent blooming varieties with genetic materials to advance to modern roses; the important role of Lyon, France around 1867 as the center of the known rose universe producing ‘La France’ the first HT, the story of a Genius and a Magician during “The Dawn of Modern Roses”; conclaves of ardent rose breeders in both France and UK sharing their mutual quest/desire for rose evolution; first National Rose Show in UK in 1858; formation of first National Rose Society in UK in 1869 by Rev. S. Reynolds Hole, Dean of Rochester Cathedral; to name a few of the many most prominent events.

Public perception and love of roses quickly gained support aided by the establishment of “Alexandra Rose Day”, a charitable fund raising event started in the United Kingdom since 1912 by Alexandra Rose Charities. The launch occurred on the 50th anniversary of the arrival of Princess Alexandra from her native Denmark (daughter of King Christian IX) to the United Kingdom. As Queen Empress to Edward VII she requested that her 50th anniversary of arrival in the UK be marked by the sale of roses in London to raise funds for her favourite charities - the rose buttonhole was born and became a tradition overnight! Yet another major influence in creating the WFRS was the advent of intercontinental air travel via such forgotten carriers as BOAC, TWA, & PanAm.

With the background to historical events that contributed to the foundation of WFRS, the presentation will continue to examine in detail the following areas of significant development:

First World Rose Convention in Hamilton, New Zealand in 1971 featuring a video section capturing the ambiance of the times including the personalities.

Tribute to the Founders



The Founders

Future World Rose Conventions (1974-present) established a firm WFRS global footprint

Establishment of Regional Rose Convention to further extend WFRS activities

Formation of Award of Garden Excellence, Rose Hall of Fame, Literary Awards

The Dreamers & Creators of Modern Roses

The Ability to Dream, the Passion to Explore, the Endurance to Act

Registration statistics on roses during the last 50 years

Role of in-situ international rose trials expanded

Roses and Humanity - Societal acceptance and reverence on the increase

Camaraderie of rose lovers throughout the world resulting in close lasting friendships

In Conclusion

The rose chronicles our daily lives providing a rich tapestry of memories, experiences, camaraderie, liberty and enjoyment. Privileged by this grace, the rose grants great cheer in happy times and on a

few occasions much needed sympathy. The rose in our daily lives is always there ... from birth ... to marriage ... to death. It's presence is often understated and rarely overstated, but it is everywhere chronicling our lives from the heights of enjoyment and celebration to the depths of despair and agony. The rose has clearly pervaded our daily lives throughout history bringing the best that civilization has to offer the human race in comforting both the mind and the body. At every stage of life the rose seems to share in our festivities as well as our suffering.

There is no better flower to represent the true essence and pioneering spirit of the Nations of the world! Its prominent diversity of form, color and configuration mirrors the distinct populations, cultures and history of its people. No other flower has played such a major role in our daily lives either through legend, medicine, music, leaders, literature capturing our affection, and sharing in our celebrations and parades.



9-11 – Ground Zero

But what is the true meaning of WFRS. Each year that passes by contributes to the overall proliferation of the rose and yet it is not what we, as rose lovers, leave behind, but more so what we leave unfinished or yet to be accomplished by the next generation. Roses through the years have brought so much joy and pleasure around the world that their legacy is a living entity as they continue to build much needed peace and tranquility in a troubled world.

The legacy of WFRS is a gift from one generation to the next. WFRS is a living legacy to all rose growers throughout the world, where every day is a new beginning and every life lived to the full. WFRS is a declaration of our faith in the future and a source of vision that one man or woman, motivated by passion for roses, can make the world a better place.

Evolution is expected to improve and promote our noble hobby to future generations. But amid all these anticipated changes, some things must never change ... things like individual decency and

honor and compassion and most all, our volunteer service to WFRS. The future of WFRS cannot be shaped only by a few leaders, but by each and every National Rose Society continuing to always point in the right direction to gain synergistic strength. The foundation established by past leaders has clearly placed the obligation of building on that success on each and every Member Country while preserving their autonomy. We all stand upon the shoulders of generations past with the free will to shape our combined destiny.

I am reminded of the words spoken by Eleanor Roosevelt,

*“Many people will walk in and out of your life,
But only true friends will leave footprints
in your heart.*

.....

*Friends, you and me....You brought
another friend....And then there were three.
We started our group.... Our circle of
friends.... And like that circle....
There is no beginning or end.
Yesterday is history.
Tomorrow is mystery.
Today is a gift.”*

WFRS is not yet perfect - we'll all keep working on that. We have our moments, but suspect that underneath it all we all think we're kinda special!



David Rushton at the monument erected in his honour

THE ROSES AU NATUREL

Eléonore Cruse, France

Abstract

A strange title because, as all of you know, only species are growing into the wild and they do where no human beings can disturb or even destroy them, so only in very protected places, for example high in the mountains or hidden in countries out of the world.

I love species, I've made many trips to find some of them and have taken a lot of pictures for a book and I succeed. But it isn't the subject of my speech of today.

I'm prospecting since many years to propose another way of gardening with historical roses at first and maybe with others too.

Let us consider the plants in nature: The light, the water, the soil and the company of other plant.

The part of the gardener

Then we can consider the gardener as a rose trainer or a kind of shepherd for plants. I have myself realized that I could influence the growth of a rose tree and I'm sure, if you have a garden, that you have noticed it.

The part of the landscaper

The landscaper has to be a very clever person! He is knowing much about organic life and society challenge and becomes nowadays a leader as well as architects.

In the new rose garden that I have created in Ruoms, I decided to remove all what wasn't belonging to the vegetable kingdom.

We have to manage so that Nature is able to do the work at our place! That means that we have to accept it. Growing roses in a simple way, yes, being rather sparing, loving a rose for itself as a marvelous dish, a present of the nature, without any special sauce.

CV

Eléonore Cruse

1968-1970 A levels passed in Paris and artistic activities (theater, painting, danse)

1970-1971 polyculture farming, interning in goats and sheep breeding

1971 Buying the agriculture exploitation of Berty in Ardèche (south of France): Art weaving, wool dyeing and breeding goats, budding trees

1984 Creation of Roseraie de Berty, a rosenursery and rosegarden

1988 Internship in Rosenplanteskolen I Love Roses owned by Torben Thim

1990-1992 Lecture in SNHF in Paris and Lyon

2000 Awarded «Chevalière du Mérite agricole»

2005 Creation of another rosegarden and orchard in Ruoms, Ardèche

2007 Jury at the Rose trail in Buenos Aires and lecture at the National Rose Society of Argentina

2012 President of honour at the National Rose trial in Orléans (France)

2012 Lecture in Tunisia GDA Sidi Amor

2010 Label Jardin remarquable received for Roseraie de Berty

2013 Label CCVS received for the whole old roses collection

2014 Creation of a rosegarden for the city of Monpezat in Ardèche, «Roseraie de l'Enclos de Clastres»

2015 Opening of a restaurant in Roseraie des Pommiers in Ruoms, Ardèche

2015 Member of the committee for Floral Villages in Ardèche

Author:

Roses anciennes et botaniques. Editions du Chêne, 1999. Photo: P. Starosta

Translated into 5 languages, Taschen Editions

Les Roses Sauvages. Etudes et Communication (Text: C Catoire, photo: E. Cruse) Editions 2001



Roses. Editions du Chêne. Photo: Paul Starosta. 2002 and dérivé sortie le 6 février 2008
Roses Anciennes ré-édition. Photo: Paul Starosta. Le Chêne, 2005
Leçons pour un jardin de roses. Photo: Béatrice Pichon. Le Chêne, 2007
Petit Atlas des roses. Delachaux et Niestlé mars 2010. Photo: Simon Bugnon
Les roses au naturel, secrets d'une rosiériste passionnée avril 2018. Photo: Simon Bugnon

ROSES IN THEIR NATURAL STATE

A bit strange, this title because, as you know, only the species grow spontaneously in nature. For that matter, they grow in places where there is no risk of humans perturbing or destroying them, in protected places like at high altitudes or in very wild areas, far from civilisation.

I love species; I have made special trips to find them in the Alps and the Massif Central in France and I have taken photographs of them for my book on wild roses. I learnt to recognise them. But this is not the subject of my talk today.

For several years now I have been experimenting with other ways of gardening, old roses to start with, and maybe other more modern roses afterwards.

On the one hand, I try to avoid all herbicides, as they are polluting, expensive, wearying and hardly efficient on roses. On the other hand, I want to grow roses that blend with their surroundings and are so happy there that they do not get diseases. Of course the flowers might not be as big as in ultra-kept gardens and the forms are looser and slacker than they are in nature but that is an advantage as to beauty and health.

Let's have a look at rose bushes in the wild, and the soil, hydrometrics and how other plants mix with roses.

I found several contributing factors and it is our job to juggle with these elements.

I will name four:

- **The role of nature:** what we see.
- **The role of the gardener:** we may consider the gardener as a seducer, a guardian, and a protector of plants.
- **The role of the landscaper:** these days the influence of the landscaper goes far beyond the garden itself. He must be a visionary and a sociologist in order to be able to make the most of plants in an innovating context but he must also take into account the efforts we have to make to preserve our planet and let creativity take its own course.
- **The role of the breeder:** it seems clear to me that the creator of roses in the 21st century is like an artist: every new rose is a new painting and every new rose bush is a new shrub. He has to study the contemporary world and be okay in it from an ecological and an economic point of view, and also with respect to beauty and wellbeing.

The Role of Nature

I have learnt a lot observing how different species of wild roses grow in nature in the northern hemisphere. I have learnt to understand what they like and what they don't like, what makes them beautiful or pitiful. I studied different aspects like light, the quality of the soil, the climate and surrounding species, roses or other plants.

What do roses do when they do not get enough light?

Maybe they are overgrown by other plants? If a rose bush is small, it will thin out and disappear.

All surrounding plants have to be of the same height in order to have their equal share of sun light.

If that is not the case, the roses have to grow very tall to catch the sun over the other plants. This is why they have to fight their way up and look for stronger branches than their own to lean on.

What do roses do when it is too dry or too wet?

Too dry? They will shrug up to a tree or a shrub to take advantage of their shade, or snuggle up to other ground covering plants to absorb the humus that forms under their leaves.

Too humid? They prefer well drained soil, stones or rubble and always grow on the top of a bump, even the smallest. You will never find a rose in a hollow: they have too much amour-propre!

What do roses do when the soil is clayey or limy?

In clay they develop a strong and deep root system. That takes time but they do succeed. In basic soil they look for the company of other plants and like to rub shoulders with rustic climbers like honeysuckle or clematis.

Most old roses adapt to any soil.

How do roses behave on the coast? And in the mountains?

Coastal areas are sandy and windy: so they hold on! They keep low in order to protect themselves and catch as much dew as possible.

Mountains mean cold and snow, so they make themselves very small and thorny; they grow between rocks to catch water, and alongside waterfalls to catch drops, as I noticed in the Alps. Sometimes they change colours when they grow in deep shade near brooks, like *Rosa glauca*.

These are examples of what nature has taught me. I have a growing understanding that cultivated roses behave like the species: they have the same needs.

My rose garden, the Roseraie des Pommiers, was just a flat field, like one sees all over Denmark. To create my rose garden, I had to start from scratch. Torben Thim came to see me and he immediately called it 'The Pancake'! That made us laugh. It was a real challenge. All the freedom in the world, a blank page to be filled in to our liking, but in any case a freebie for imagination and fun!

As a conclusion to this part, I would like to add that roses are able to face many difficulties and find ways to survive. I found that their behaviour is very similar to the behaviour of animals. We only have to be aware and show sufficient presence of mind to understand the biological processes for ourselves and our favourite plant and follow the way nature shows us.

The Role of the Gardener

We may consider the gardener as a charmer of roses or a shepherd of plants. I have found that I can influence the growth of a rose bush and I am sure that, if you have a garden, you will have experienced that too. We can tie up branches along a wall or a pergola but more surprisingly, we can show the initiative and ask them: Would you please go into that direction as the light over there is just perfect for you? Light is their food; most of the time roses allow to be gently directed towards the sky because they are naturally attracted to it. Often they themselves find the best way, a way we have not thought of. They do, and we must recognize the merits of their behaviour. We must accompany them, encourage their movements as much as geographically possible because beauty belongs first of all to nature.

Our role of boss consists in studying the characteristics of each variety in order to be able to choose the rose that is best suited for what we want it to do. It is just a matter of education on both sides!

The Role of the Landscaper

The landscaper should be clairvoyant. He must be an expert in botany and design but also play the role of a leader the same way architects do.

He has a role to play in the sociocultural context of our times to create our ways of life. He must have a perfect knowledge of history and ecology. He must be leading the way to find the answer to the needs of our contemporary way of life: how to enter the future in such a way that human happiness will stay a priority for all? That's where our favourite flower comes in. It is like an emblem. A rose garden is a haven of peace ever more precious for working people, youngsters and the elderly. It makes privileged persons of all those who spend much time there, aficionados and professionals alike.

If one can get help, that's great, if not, one should go for the best solution so that gardening will stay a pleasure and not become a health hazard. Here the company of wild plants and well-chosen trees may bring out the best in our roses, just as well as an English style mixed-border and a perfect lawn. The result will be different but ever so romantic, especially if the garden is in a rural area. Some people will criticise, others will love it.

I will give you a few examples of landscaping in my two rose gardens that I mostly work alone, each in a different style and mostly for my own pleasure.

Series of photographs of the garden with commentary

The Roseraie de Berty is situated in a very beautiful and protected natural environment, accessed by a dirt road of over 2 kilometres long, far away from the main roads. The garden lies in a lonely valley near a small river subject to impressive spates. It used to be a farm where the peasants were self-sufficient; it belonged to a noble family and the church but these people did not live there. In those days there wasn't even a dirt road, just a path over the hill that the peasants took on foot or on horseback.

I arrived there in 1971. After some years of cattle breeding and weaving, I took up rose growing in 1984 although the soil was of rather poor quality. The very thin layer of soil was stony and wouldn't hold water as the fields were on the alluvium of the river bed. However, the old roses found everything they needed for their wellbeing and I never used any fertiliser. One may say they simply adapted themselves and the creation of the garden planted with various hardy plants formed a kind of self-sufficient microcosm. Life leads to life. I must say that in this semi-Mediterranean climate the presence of the nearby river was beneficial from all points of view, especially for watering the plants, so much needed in the Ardèche. The varieties also had to be really hardy so I selected from my catalogue those that were interesting enough to reproduce. Looking back I can now say that I still need to eliminate or add some, as nowadays certain modern varieties adapt very well to these difficult conditions.

Even if the soil in the Roseraie des Pommiers in Ruoms is very much better, I find that the varieties that grow best are the same in both rose gardens.

Which is why I would like to end this conference with:

The Role of the Breeder

He is the one in charge. He is between past and future.

Like a chef he may be famous worldwide, he prepares the gardens of tomorrow and even the transition that seems indispensable to me.

I know that a new rose is the result of years of research, and I am particularly interested in the evolution of hybridization.

Multiple crossbreeding weakens the immune resistance. It is therefore difficult to reconcile novelty, modernism and hardiness.

Photograph of the rose Eléonore Cruse

That is why I am interested in hybridization with species of which the genetic heritage has been little exploited so far. We should also take into account the vigour and the resistance to illnesses of the chosen parent plants for the creation of new varieties.

Certain breeders consciously wander away from the form of the classical rose (style cut flower) to explore forms closer to wild roses with visible stamens. (Peace and Love)

Photograph of Paula Vapelle by Yvan Louette Belgium

Others concentrate on the creation of so called long-flowering landscaping roses.

Photographs of Patricia Beucher, Plaisanterie etc.

Sam McGredy and his roses

Doug Grant, New Zealand

Abstract

Sam McGredy IV was born in Portadown, Northern Ireland in 1932 and was 2 years old when his father, Sam III, died. At that time the McGredy nursery was producing a million plants a year and around 40 acres in size. Sam's uncle, Walter Johnson ran the nursery until 1952 when Sam took over.

In his early breeding days, he endeavoured to carry on where his father left off. However, he quickly decided that it would be better to start off a new strain and use his own methods. In his early years he added new varieties to the breeding programme to invigorate the McGredy breeding lines.

Sam's first rose was 'Salute', a cherry red and yellow bicoloured floribunda introduced in 1958. This was followed by his first Gold medal winner 'Orangeade', then 'Piccadilly', another Gold Medal winner. Many other awards were soon to follow.

Sam visited New Zealand in 1971 for the first WFRS Rose Convention. This taste of New Zealand together with the problems in Northern Ireland led to Sam and his family emigrating to New Zealand in 1972. Sam's arrival saw him lobby successfully for the introduction of the New Zealand Plant Variety Rights legislation and the establishment of RINZ, the Rose Introducers of New Zealand, an organisation to represent breeders and their agents in the marketing of new varieties of roses.

This presentation will outline Sam's breeding from his early days in Northern Ireland, through to New Zealand and it will include his hand painted roses, striped roses, miniatures, climbers, fragrant roses and the influence of 'Sexy Remy' in breeding.

CV

Doug Grant is all things roses: a speaker, lecturer, writer, consulting rosarian, amateur rose breeder, administrator and gardener of modern and old roses.

He is a graduate of Massey University, having completed his graduate studies in biometrical genetics. Professionally he is a scientist and consultant specialising in genetics and breeding of onions and cucurbit crops.

He is a Past President and Life Member of the New Zealand Rose Society and has served on the New Zealand National Council since 1990. For his achievements with the Rose, he is a recipient of the WFRS World Rose Award, the T.A. Stewart Memorial Award, the New Zealand Rose Award and the Frank Penn Memorial Award.

Doug convenes an annual Consulting Rosarian workshop for Rosarians. He contributes articles to the 'New Zealand Rose Annual' and other publications. He is the compiler of the annual NZRS publication, "The New Zealand Rose Review", which assesses newer rose varieties and favourite roses. He is a past attendee of many WFRS world and regional rose conventions.



Sam McGredy and his Roses

Early Family History

The rose breeding operation of Sam McGredy IV commenced in 1952 when he reported to work at his family's rose nursery in Portadown, Ireland, after a period away from home. Sam was born in Portadown in 1932 and his father, Sam III, had died at age 38 when Sam IV was 2 years old.

Sam's father married Ruth Darragh and had three children, Molly, Paddy and Sam. At that time the nursery in Portadown, Ireland was producing a million plants a year and around 40 acres in size. With the death of Sam III, the business was taken over and run by Walter Johnson, Sam's Uncle Walter and brother in law of Sam's father.

During the Second World War period the Portadown nursery was converted to growing vegetables. After the war Walter Johnson and his team brought the roses back again. At this time Sam IV went to boarding school at Enniskillen in Ireland; then in 1948 he had an exchange scholarship to attend the Mercersburg Academy in Pennsylvania, USA. In 1949 Sam attended the Greenmount Agricultural College in Northern Ireland to study horticulture and then on to Reading University where time was spent playing rugby football. After this, Sam received some practical nursery experience working with rhododendrons at Slocock's Wholesale Nursery in the United Kingdom.

Early Breeding

Rose breeding for Sam began in 1952 when his Uncle Walter gave him the keys to the breeding house. He was given the responsibility to carry on the family's tradition for breeding roses. Sam's first year was spent learning the trade. In this year he endeavoured to carry on where his father left off but he quickly decided that it would be better to start off a new strain and use his own methods. In the early years he added new varieties to the breeding programme to invigorate the McGredy breeding lines. He planted up some good parents and brought in some outsiders. There were problems with rotting of hips, mildew and low germination rates of only 15 to 20%. Sam's philosophy at the start was that the key to plant breeding lay in three areas: observation, quantity and efficiency. Observation taught Sam what was happening with parents and progeny, having a reasonable quantity of seedlings gave a better chance of finding something good and for efficiency, attention to detail with plant production was important for improving germination to over 75%.



Early Introductions

The first rose that Sam released was 'Salute', a cherry red and yellow bicoloured floribunda. This was introduced in 1958. This was the only seedling that passed all of Sam's tests out of quite a large crop from 1953. This was followed in 1959 by Sam's first award winners 'Orangeade', and 'Chantelle'. The year after in 1960 came 'Piccadilly', a red and yellow coloured HT and another Gold Medal winner.

In 1961 'Mischief', a coral salmon coloured HT was Sam's first International President's Trophy Award winner. The President's Trophy is awarded by the RNRS of the UK for the best new seedling of the year. 'Paddy McGredy' a deep rose-pink floribunda and named after Sam's youngest sister was introduced in 1962. In 1964 Her Majesty the Queen Mother and patron of the RNRS, gave Sam permission to name a rose after her. This rose was named 'Elizabeth of Glamis', and was a light salmon coloured floribunda which went on to win major honours, the President's International Trophy and the RNRS Gold Medal.

Plant Breeders Rights

Sam had a keen interest in obtaining plant breeders rights for plant breeders. This would give breeders a return on their investment for the considerable expense occurred in developing new varieties by the levying of royalties on each rose plant propagated.

Sam played a large part in convincing the Government of the United Kingdom to introduce Plant Breeders rights in the UK. The Government of the time after much consultation and discussion passed an Act of Parliament in 1964. Sam obtained Plant Breeders Rights on climbers 'Handel', 'School Girl', the Floribundas 'Arthur Bell', 'Molly McGredy' and 'City of Leeds'. Sam also played a major part with the introduction of the New Zealand Plant Varieties Act of 1973. The first Plant Varieties Right was granted in 1976 to Sam McGredy Roses International for his rose 'Matangi'.

New Zealand

Sam visited New Zealand in 1971 for the first WFRS Rose Convention held in Hamilton; he had visited the country twice before in the 1960's. This taste of New Zealand together with the political problems in Northern Ireland at that time turned to thoughts of emigration. Sam moved to New Zealand in 1972 with wife Maureen and two daughters Kathryn and Maria. The events that followed included third daughter Clodagh being born, Maureen and Sam parting company and later Sam marrying second wife Jillian.

When Sam first arrived in New Zealand he leased a glasshouse from Frank Schuurman at Henderson, in Auckland. This arrangement continued for twelve years where Frank and his team at Sunbeam Roses budded Sam's field trials and even introduced a series of Sam's miniature roses. These included 'Ko's Yellow, named for Franks wife, 'Wanaka', 'Takapuna', 'Kaikoura', 'Moana', 'Otago', 'Waitemata', 'Firefly', 'Snow Carpet' and a number of others.

Rose Introducers of New Zealand

Sam was behind the establishment of the Rose Introducers of New Zealand (RINZ). This was the organisation to represent breeders and their agents in the marketing of new varieties of roses. RINZ was to promote and introduce new varieties and license producers to grow and collect royalties.

RINZ established a rose trial at the Auckland Botanic Gardens at Manurewa with the Auckland Regional Council. This had come from an idea from the late John Martin with inspiration from Sam. The driving force behind this trial was to assess the commercial potential of the newer varieties. The first trial was judged in 1990 and was known as the Auckland Rose of the Year. The trial moved location to the Rogers Rose Garden in Hamilton in 2001 and became known as the New Zealand Rose of the Year and it became part of the Pacific Rose Bowl Festival. Sam instigated the Pacific Accord of Friendship between the rose trials in Adelaide in Australia, Rose Hills in the USA and Gifu in Japan to promote friendship and exchange of information among the countries that host these trials.

Awards

Sam has received numerous awards for his roses. His first Gold Medals were in 1959 for 'Chanelle' and 'Orangeade'. He was awarded All American Rose Selections (AARS) for 'Mullard Jubilee' ('Electron'), 'Coventry Cathedral' ('Cathedral'), 'Sundowner', 'Olympiad', 'New Year', 'Spek's Centennial' ('Singin' in the Rain') and 'Fosters Wellington Cup' ('Mount Hood', 'Fosters Melbourne Cup').

Sam was awarded the President's international Trophy for the Best New Rose at the Royal National Rose Society trials in the United Kingdom trials for 'Elizabeth of Glamis', 'City of Belfast', 'Molly McGredy', 'Matangi', 'Pricilla Burton', and 'Solitaire'. He received 15 Gold Medals from the RNRS, the Queen Mary Commemorative Medal (twice), fourteen Gold Stars of the South Pacific at the Palmerston North rose trials in New Zealand, Gold Awards at the Belfast rose trials, the Gold Medal of the Royal Irish Horticultural Society and the Golden Rose of The Hague in Holland with 'Jan Spek', 'Satchmo', 'City of Belfast', and 'Rock 'n' Roll'.

Sam was awarded the CBE (Commander of the Most Honourable Order of the British Empire) in 1994 for services to horticulture, the Dean Hole Medal by the Royal National Rose Society in 1983, the New Zealand Rose Award for 1986, the Australian Rose Award for 1988, an Honorary doctorate by Massey University in 1996, the Gamble Medal from the American Rose Society, the Gold Medal of the World Federation of Rose Societies in 1997, the Associate of Honour from the Royal NZ Institute of Horticulture and the OBN (Order of the Blue Nose) founded by Niels Poulsen of Denmark.

The British Post Office had a commemorative stamp issue in 1977 for the "Year of the Rose". One of the stamps featured was Sam's rose 'Elizabeth of Glamis'. Another of Sam's roses, 'Aotearoa-New Zealand' bred as his gift to New Zealand to celebrate the country's 150th anniversary in 1990, featured on a joint stamp issue between New Zealand and the People's Republic of China. Other roses from Sam that have been seen on postage stamps include 'New Year' and 'Candella', in New Zealand, 'Kronenbourg' in Uruguay, 'Piccadilly' in Romania and 'Old Master' in Norway and Belgium.



'Aotearoa-New Zealand'

Breeding in New Zealand

By the time Sam and his family had settled in New Zealand, progress had been achieved with breeding climbers; Dublin Bay was released shortly afterwards in 1975. It is still a major part of the New Zealand gardening scene today. At this time the "hand-painted" rose series was on the way with the introduction of 'Picasso'. 'New Penny' and one of its seedlings 'Anytime' were to play a major part with the breeding of miniature types, 'Stars 'n Stripes' became the background for the striped roses, a 'Little Darling x Goldilocks' seedling was to become important for breeding floribundas, 'Freude' important for Sam for breeding the Hybrid Teas, 'Harmonie' and its seedling 'Aotearoa NZ' for fragrance while 'Sexy Rexy' was to play a dominant part with increasing flower numbers on roses. Other important parents for Sam included 'Arthur Bell', 'Piccadilly', 'Eyeopener', 'Mary Sumner' and 'New Dawn'.

Hand-Painted Roses

One of Sam's objectives was to breed novelty. Back in the 1950's Sam had made a series of crosses using the Spinosissima hybrid 'Frulingsmorgen' to find hardiness and disease resistance. One seedling with an unusual flower did attract attention in 1963. It had dull pink flowers with a marked white edge to each petal. This was crossed to 'Evelyn Fison' to produce MACjose. At the same time a seedling from *Rosa macrophylla*, 'Coryana', ('MACcortan'), together with MACjose formed the background to what was to become known as the "hand-painted" series of roses. These roses are of one colour splashed with another.

'Picasso' was the first of the hand-painted series and was marketed in 1971. Its red petals are splashed and edged with a silver white colour. From this followed 'Matangi', 'Old Master', 'Eyepaint', 'Priscilla Burton', 'Sue Lawley', 'Regensburg', 'Maestro' and 'Rock 'n' Roll'. Hand painted miniature-types included 'Rag Time' and 'Mighty Mouse'. The hand-painted Hybrid Teas included 'Derek Nimmo' and 'Candella'. One feature of the hand-painted types is that they may not be completely stable with their colour. A number of them only produce the characteristic edge to the petals under cooler weather conditions.

Miniature-type roses

'New Penny', an orange-red *R. wichuraiana* seedling from Ralph Moore was one of original miniature parents used by Sam. He was looking to develop a free flowering plant. From 'New Penny' he bred 'Anytime'. These two roses were to have a huge influence on breeding miniatures. A series of miniature types were introduced in New Zealand and elsewhere in the late 1970s with New Zealand place names: 'Kaikoura', 'Takapuna', 'Wanaka', 'Otago', 'Waitemata', 'Hauraki' and 'Manapouri'. The advantage of this type of plant was the freedom of flowering, their marvellous foliage, rounded growth habit and that they could also be grown as standards or they made attractive container plants.

Striped Roses

Ralph Moore's "Stars 'n' Stripes" was the origin of Sam's striped strain which all started from just one season of pollen from 'Stars 'n' Stripes'. It was supposed to be pollen sterile but only produced pollen that one year for Sam. From this came 'Hurdy Gurdy', 'Roller Coaster' and 'Pandemonium' and in the larger roses resulted in 'Michelangelo', 'Oranges 'n' Lemons', 'Maestro', 'Rock 'n' Roll' and 'Marvelle',

Floribundas and Hybrid Teas

The rose 'Sexy Remy' was an important development in Sam's breeding. Its progeny were very floriferous and its origins went back to the miniature 'New Penny'. When 'New Penny' was hybridised with 'Elizabeth of Glamis' it produced 'Seaspray' which in turn produced 'Sexy Remy' with pollen from 'Dreaming'.

From 'Sexy Remy' came 'Jillian McGredy', 'Spek's Centennial', 'Dame Cath', 'Rock 'n' Roll', 'Fosters Wellington Cup' ('Mount Hood'), 'Auckland Metro' and many others. 'Auckland Metro' crossed with 'Harmonie' produced 'Aotearoa NZ' and more fragrant roses.



'Sexy Remy'

'Auckland Metro', 'Aotearoa NZ', 'Lantern' and others were a newer type of Hybrid Tea that have flowers in large trusses, with each bloom on its own stem and producing continuous flushes throughout the season. 'Sexy Remy' also produced floribundas and miniature rose varieties with the increased flower numbers that were seen in the Hybrid Teas.

The Hybrid Tea rose 'Freude', bred by Reimer Kordes was used extensively by Sam in his breeding house when it first came out. From 'Freude' Sam bred 'Nobilo's Chardonnay' ('Chardonnay'), 'Tess', 'Maria McGredy', 'Louise Gardner' and 'Solitaire'. From Solitaire came 'Aloha', 'Emperor', 'Heart of Gold', 'Paddy Stephens' and the sport 'Hamilton Gardens'. From 'Louise Gardner' came 'Marvelle', 'Maggie Barry', and 'Lantern'.

Sam's early Hybrid Tea line from 'Piccadilly' and 'Arthur Bell' produced 'Fragrant Hour', 'Yellow Pages', 'Typhoo Tea' and 'Benson and Hedges Gold'. The combination of 'Yellow Pages' and Benson and Hedges Gold' produced 'City of Auckland' and a generation later 'Kathryn McGredy'.

Fragrance

Fragrance in the rose for Sam, has always been an important objective for breeding. Parents used included 'Elizabeth of Glamis' which produced 'Courvoisier' and from that came 'Tess' and 'Carolyn'. 'Harmonie' produced 'Aotearoa NZ', 'Super Bowl' and 'Spiced Coffee'. 'Aotearoa NZ' produced 'Clodagh McGredy', 'Titanic', 'Emperor' and the sport 'Land of the Long White Cloud'. 'Starlight' ('Lagerfeld') produced 'Super Bowl' while pollen from Pat Stephens' 'Big Purple' produced 'Old Port'.

Summary

'Hamilton Gardens' a sport of 'Paddy Stephens' which was released in 2008, was the last of the McGredy roses to be introduced. So, this introduction brought to an end Sam's rose breeding as well as an end to four generations of McGredy rose breeders. Sam IV's contribution to the world of roses included the introduction of novelty with the "hand-painted" and the striped roses, improved plant health, increased flower numbers from the influence of 'Sexy Remy', fragrance with 'Aotearoa NZ', the modern Hybrid Tea with increased freedom of flowering and many many other new roses over a fifty-year period.

Rose breeding in Germany before 1800

Anita Böhm-Krutzinna, Germany

Abstract

In the Baroque period garden roses, usually imported, were certainly much valued in Germany as they had been since the Middle Ages, but there was a relatively narrow range since they were rarely used for breeding. Only when the English landscape garden became fashionable were new rose varieties produced – above all in England after 1740. Starting in 1773 the German head gardener Daniel August Schwarzkopf also bred a wider range of roses, some of which were given French names. The inclusion of these new roses by Dutch gardeners on their international sales catalogues initiated a new enthusiasm for roses, which was to lead to the rose becoming one of the most loved of all flowers.



CV

Anita Böhm-Krutzinna has been a passionate rose-lover since childhood. She is particularly interested in the history of roses and their breeding. Besides studies on roses, she has published works on fiction and on painting. She lives with her family in Frielendorf, Germany.

Rose Breeding before 1800 in Germany

The subject of rose breeding in Western Europe between the Middle Ages and 1800 is particularly fascinating, for this is the period in which we see the beginnings of a development that was to lead to the creation of the many rose varieties that give us so much pleasure today. If we examine this period, several questions arise, among which are:

Were roses bred as early as in the Middle Ages or the Baroque period?

Who was it, above all in Germany, who sowed rose seeds and selected the best seedlings?

Was artificial pollination of roses practised before 1800?

A talk of this kind cannot provide exhaustive answers to these wide-ranging questions, but an overview is possible. Follow me now in a search for information, on a journey through four centuries of rose history:

Rose Breeding in the Middle Ages, Renaissance and Baroque Era

A very early indication of rose seed planting in Germany can be found in the „Pelzbuch“ of Gottfried von Franken. “Pelzen” here meant budding or grafting in the widest sense. This manual was published around 1350 in Würzburg and was translated into various languages.

The treatise concerns itself above all with viticulture and the grafting of fruit trees. But the text mentions three roses: The White and the Red Field Rose and a white garden rose. Petals of the Field Roses were fermented in order to improve the taste of the wine.

Roses were propagated from seed:

*„Wie man rosen bekommen schull.
Rosen chern, wenn die gar czeitig werden,
die sä man, als man auch andern samen sät,
jn dem Merczen oder jn dem Hornung“¹*

In other words: „To obtain roses. Ripe rose seeds are sown, when other seeds are sown, in March or in February.”

It is possible that this indicates some element of rose breeding. Perhaps only the biggest hips of wild roses were sown in the hope that the seedlings derived would also yield big hips. But the “Pelzbuch” does not say anything about their selection.

This would, however, have been enormously helpful for the collection and processing of hips, whose pulp was used to produce a syrup.

With the end of the Middle Ages we also see the early stirrings of a desire to grow flowers for decorative use and to display them in the garden in various colours. Colour was the thing! In this period, however, West European flora showed little diversity of species, which explains why in time foreign introductions like snowdrops (*Galanthus nivalis* L.) or lilacs (*Syringa vulgaris* L.) were taken up with so much interest and enthusiasm.

Of course, the Gallica Rose was known in Europe as long ago as 1350, but in those days the only double garden rose in Franconia was the Alba Rose. So they hit on the genial idea of using a thick needle to bore a hole in a cane under a bud and squeezing deep red, blue, yellow and green pigment

¹see Patzlauer Pelzbuch. Cod. XVI E 32. 15. Jahrhundert. Nr. 49

into it.² Evidently this old technique succeeded in creating a change of petal colour, for we find it still recommended in gardening books as much as 300 years later.

During the Renaissance and in the Baroque era the enthusiasm of florists was directed above all towards tulips, carnations, anemones, ranunculus, hyacinths and auriculas and much money was spent on them. But there were always some flower lovers who did not follow this trend and considered the rose to be the queen of flowers.

The first rose monograph in German – *Rhodographia*³ by Johann Wittich of Dresden – appeared as early as 1604. This small book describes not only wild roses but seven garden roses and gives a detailed account of how roses could be used medicinally. (By the way: he advises those suffering from constipation to eat three or four Musk Rose buds.)

By 1613, 21 different rose varieties and forms could be seen in the garden of the bishop Johann Konrad von Gemmingen in Eichstätt, a small city in Bavaria.

The roses in this garden were carefully chosen to evoke admiration.

Beside wild roses like the Dog Rose, Sweet Briar (*R. rubiginosa*), Burnet Rose, Austrian Briar and Cinnamon Rose, there were various cultivated roses. Among these were types of the French Rose, Damask Rose, Musk Rose, Sulphur Rose, White Rose and the Cabbage Rose.

The bishop commissioned the painting of the plants in his garden and these paintings formed the substance of a sumptuous and expensive publication: “Hortus Eystettensis”.⁴

The bishop was not alone in his passion for plants, however. Indeed, in this period, particularly in the Netherlands and Germany, there were prosperous garden lovers who were prepared to spend huge sums to outdo other plant collectors.

It seems that they paid captains, merchants and travellers handsomely for rare plants, not least rare roses from the Far and Near East – from India as well as from what is today Azerbaijan or Iran⁵. Since some of these exotics were so expensive, they were jealously guarded.

In 1710 the head gardener and author Heinrich Hesse described precious and tender „Indianische Rosen“⁶ found in Dutch collectors` greenhouses and orangeries, for example double musk roses in the various colours – purple, purple with white streaks and white with red streaks – that bloomed from the end of August until the beginning of winter. These were grafted onto *Rosa rubiginosa* L.⁷ One of these “Indian roses” was considered mistakenly by Hesse to be the rose-coloured perpetual flowering Autumn Damask Rose “*Rosa italica perpetua sive omnium mensium*”. He writes: This beautiful rose also arrived in Holland years ago from India. In its canes, its form and its perfume it resembles the Damask Rose, and its foliage is evergreen. The blooms, purple streaked with white, are held in clusters.⁸

According to Wimmer, only some of these roses, probably the most frost hardy, found their way onto the market and many of them have been lost.⁹ The same was true of the *Rosa chinensis* Jacq., that Jan Frederik Gronovius possessed in Leiden around 1733. A herbarium specimen in London

² see for example Codex Pal. Germ. 286, Meigenberg, Konrad von: Buch der Natur und Gottfried von Franken: Pelzbuch. 1442

³ see Wittich, Johannes: Rhodographia. Dresden 1604

⁴ see Besler, Basilius: The Besler Florilegium. New York 1989 or: Hortus Eystettensis/ Der Garten von Eichstätt. Das große Herbarium des Basilius Besler von 1613 Nachdruck. München 2008, p. 94 – 99

⁵ Hesse, Heinrich: Teutscher Gärtner. Leipzig 1710, p. 46

⁶ “Indian plants” was a term used for plants from the Far East and America, which were not frost-hardy; the term “Roses” may have included plants with rose-like blooms

⁷ Hesse 1710, p. 81

⁸ Hesse 1710, p. 86

⁹ Wimmer, Alexander Clemens: Rosen im Barockgarten. in: Zandera 9 (1994), Nr. 2, p. 51

proves its existence. About fifty years later a rose of this name was marketed by a German nursery in Berlin and was grown in Kassel.

Planting of roses in the pleasure gardens of the Baroque period was limited to a few bushes (later standards) in the borders and to decorate leafy walks. Roses were also used for hedging.¹⁰ But hardly a garden – however small it might be – could be found where there was no rose.¹¹ In general it was the twelve garden roses, known throughout Europe, that were grown:

1. *Rosa Centifolia*
2. *Rosa alba plena*
3. *Rosa maculata flore pleno*
4. *Rosa menstrualis or Mondrose /flore pleno rubro*
5. *Rosa muscata or Damascena flore albo, pleno*
6. *Rosa muscata simplici or Rosa autumnalis*
7. *Rosa Turcica flore luteo pleno*
8. *Rosa Turcica flore luteo simplici*
9. *Rosa Turcica, flore purpureo pleno*
10. *Rosa Turcica, flore purpureo simplici*
11. *Rosa provincialis, flore rubro*
12. *Rosa persica, flore albo & purpureo and others*¹²

Thus the average range of roses had by 1710 remained substantially unchanged for a hundred years.

In the 17th and 18th centuries there were already many garden plants that were in large part the result of breeding activity. This is proved by instructions regarding their sowing, by plant lists and paintings of the period. It is amazing that in the late Baroque period many hundreds of varieties of carnations, anemones and ranunculus existed! Around 1790 there were more than 1000 varieties of hyacinths on the market!

Still, before 1700 there was usually no understanding of the reason why different varieties emerged from the seeds they planted. It was clear that God had created the wonders of nature. But gardeners pondered as to whether this or that method might be employed in support of these wonders.

Some thought that good soil and manuring might produce new forms. From time to time there were attempts to improve the scent of flowers by winding a wreath of particularly fragrant roses around the roots of another flower when planting it.¹³

Others thought that the position of the stars and the planets had an important influence on the growth of plants and that they exercised a powerful influence on the formation of new varieties.

Advice according to cosmological principles is a common feature of pre-1720 gardening books.¹⁴

A change in the colour or the number of petals was also thought to be caused by the different phases of the moon, and only the White Rose or the “Rosa Morlion” sometimes set seeds. In the Baroque

¹⁰ Wimmer, 1994, Nr. 2. p. 53

¹¹ Dümler, Wolfgang Jacob: Erneuerter und vermehrter Baum- und Obstgarten. Nürnberg 1664, p. 376

¹² Hesse 1710, p. 712 (These roses are probably: *Rosa x centifolia* L., *Rosa x alba* (Loisel. et Michel) Rowley, *Rosa gallica* var. *versicolor* L., *Rosa damascena* var. *semperflorens* (Loisel. et Michel) Rowley, *Rosa moschata* var. *plena* West., *Rosa moschata* Herrm., *Rosa hemisphaerica* Herrm., *Rosa foetida* Herrm., *Rosa gallica* var. *officinalis* Andr., *Rosa gallica* L., *Rosa x damascena* Mill., York and Lancaster)

¹³ Elsholtz, Johann Sigismund: Neu angelegter Garten-Baw. Leipzig 1715, p. 98

¹⁴ Schwimmers, Johann Michael: Deliciae Physico-Hortenses oder Physikalische Gartenlust. Erfurt 1702, p. 179

period, the climate of Western Europe was colder than today and it is therefore probable that many rose seeds did not ripen. Besides, the propagation of roses from seed is a lengthy process. So in many old books on gardening we even find advice not to sow rose seeds¹⁵ and in general roses were propagated by means of suckers.¹⁶

Moreover, Gardens were mostly very neat in appearance, that is, there was much pruning and only rarely were blossoms tolerated once their blooming was over. It was therefore almost impossible for chance seedlings to survive in these gardens.

There were, however, new ideas emerging in this period:

In antiquity it was already well known that palm trees could be either male or female. Generally a better crop was had when the female flowers were artificially dusted with the pollen of the male flowers.

Two thousand years later it was discovered that most flowering plants supported male and female organs within a single blossom.

Here we can mention only the names of Nehemiah Grew¹⁷ of London, who in 1682 put plants under the microscope and named their individual parts and functions; Professor Rudolph Camerarius of Tübingen, who in 1694 proved that pollen was needed to produce fertile seed¹⁸; and Carolus Linnaeus, who in 1735 created a botanical classification system based on the number and type of the sexual organs¹⁹.

It seems this knowledge had little practical effect in Germany before 1760.

The breakthrough came with the experimental crosses performed by Joseph Kölreuter. His books were distributed in Germany and gave a powerful impuls to the breeding of popular flowers.

Development of roses in Western Europe after 1730

What have we seen so far? The range of roses used in important gardens in the Baroque period numbered around 20 to 25, usually bearing descriptive Latin names, e.g. “Rosa alba plena”. Around 1750, however, we find nurseries offering 50 garden varieties. In other words, the range had doubled in number.

England

Even earlier there were here and there gardens in Germany in which roses played a role. Possibly there were also those which played on the double meaning of the word “rosarium” and were laid out in the form of a rosary and used as a garden for religious meditation.²⁰

But as the rigidly ordered Baroque garden ceased to be fashionable – a trend that started in England – and the more natural “English landscape garden” became all the rage, a change occurred also in the plants used. Rose gardens or “rosaries” first became popular in England around 1740.²¹ Since the number of garden roses was relative small, a careful watch was kept for sports and rose seeds were sown.

¹⁵ Elsholtz, Johann Sigismund: Vom Garten-Baw. Cölln an der Spree 1672, p. 278

¹⁶ Schwimmers, 1702, p. 276

¹⁷ see Grew, Nehemiah: Anatomy of plants. London 1682

¹⁸ see Camerarius, Rudolph Jakob: De sexu plantarum epistola. Tübingen 1694

¹⁹ see Linné, Carl von: Systema Naturae. Amsterdam 1735

²⁰ see Passau, Donatum von: Rosetum dolorosum centifoliatum: Schmerzhafter Rosen=Gart von hundertblättrigen Rosen. Passau 1694

²¹ see Laird, Mark: The Flowering of the Landscape Garden. Philadelphia 1999, p. 200

The foreman of the Botanic garden at Chelsea near London, Philip Miller (1691-1771), found out that insects transferred pollen dust from flower to flower. Miller was not only one of the most famous garden authors of his century, but also a rose lover. In the various editions of his book *Gardeners Dictionary* he was an early promoter of rose sowing, describing in 1768 a Velvet Rose, 'Velvet Royal' or 'Holoserica Regalis'. He derived it from the seed of the pale Provence Rose. So it is not surprising that we read of other similar successes.

In 1770 Richard Weston listed 79 roses²² including several Burnet Roses which were very popular in his country; in 1799 Mary Lawrance painted 90 roses for her book „A Collection of Roses“²³.

The Netherlands

The only rose breeder in the Netherlands who Gerrit Kleis in his well researched book *Rozenteelt in Nederland* is able to describe with any precision is Cornelis Stegerhoek. He owned one of the biggest firms engaged in the production of rose petals in Noordwijk. Evidently, in 1789 Stegerhoek was able to present Prince Willem V with four rose varieties. One of these was named in Dutch after the Prince.²⁴

Around 1788 the first Dutch catalogues appeared in Haarlem, listing a range of 90 roses. The gardeners Jean Kreps²⁵ and Gottfried Voorhelm²⁶ offered some of their roses with made-up French names. That was new for roses! Voorhelm moreover sold his range to the French gardener François²⁷ from Paris.

It seems the Dutch gardeners liked to baptise roses with novel names. It is possible they also received new roses without name-tags. This, however, led to such confusion that a buyer could order three or four different varieties only to find they were all the same. Some nurseries, therefore, returned to the practice of identifying their roses by means of Latin descriptions.²⁸

Around 1797 **Cornelis de Graaff** of Lisse published his „Catalogue des Arbres Rosiers“²⁹, which was probably the first catalogue to offer solely roses.

Some of the roses bearing French names in this catalogues are, however, varieties that were bred by the German head gardener Schwarzkopf, whose career we shall examine below. Examples are: 'Majestueuse', 'Soleil Brillant', 'Perle d'Orient', 'Pourpre Agreeable', 'Grande Couronne', 'Le Glorieux', 'Lustre Eglise', etc.³⁰

Germany/Hesse

Daniel August Schwarzkopf

According to the latest research, there is no evidence of systematic rose breeding in either France or Italy³¹ before 1795.

²² Weston, Richard: *Botanicus universalis et hortulanus*. London 1770, p. 252-255

²³ see Lawrance, Mary: *A Collection of Roses*. London 1799

²⁴ see Kleis, Gerrit: *Rozenteelt in Nederland*. MS 't Goy-Houten 2007, p. 48

²⁵ Kreps, Jean: *Catalogue des plus belles Plantes*. Haarlem 1790

²⁶ Voorhelm Schneevogt: *Catalogus of Dutch Flower Roots*. Haarlem 1792

²⁷ François: *Catalogue des Principaux Arbres, Arbrisseaux, Arbustes*. Paris 1790 (Bibliothèque nationale de France)

²⁸ see Böhm-Krutzinna, Anita: *Gartenrosen und Rosengärtner in Deutschland und Westeuropa in der zweiten Hälfte des 18. Jahrhunderts*. in: *Zandera* 32 (2017), Nr. 2

²⁹ De Graaff, Cornelis und Jan: *Catalogue des Arbres Rosiers*. Lisse, Niederlande um 1797 (Bibliotheek Koninklijke Algemeene Vereeniging voor Bloembollencultuur Hillegom)

³⁰ see Böhm-Krutzinna, Anita: *Unter den Rosen*. Norderstedt 2015

³¹ see Hornung, Andrew: *Le Rose italiane*. Pendragon 2015

Therefore, we can say that Europe's first "real" rose breeder, raising many new varieties, was **Daniel August Schwarzkopf**³² (1737-1817).

His father was head gardener to the von Veltheim family in East Germany. Thanks to the patronage of this family the young Schwarzkopf was able to frequent a very good school, where he learned several languages as well as basic botanical principles.

He received his practical training as a gardener from his father and uncle. He undertook placements in various important gardens not only in Germany but in the Netherlands and England, not least under Philip Miller at the Chelsea Botanic Garden in London.

In 1766 Schwarzkopf was hired as head gardener by Landgrave Friedrich II of Hesse-Kassel.

In the pleasure garden of Weißenstein near Kassel Schwarzkopf established a nursery that specialized in raising North American trees and shrubs.

He was also responsible for the planning and reorganisation of various noble parks and gardens. Schwarzkopf was renowned for his innovative methods of work. He was therefore promoted to the position of inspector of the royal gardens in 1790.³³

Daniel August Schwarzkopf died in Kassel in 1817 at the age of 81.

Schwarzkopf and Roses

At Weißenstein the park included a rose garden. It must have been wonderful to amble through that garden in June.

In 1773 Schwarzkopf started his breeding activity using these roses. Moreover, he did not limit himself to a single class of roses, sowing the seeds of many different species and varieties found in the park. Of the roses he produced, particularly well-known were his Rubiginosa-hybrids, but there were also many Gallicas, Albas and Damask Roses – even some Centifolia varieties.

As early as 1777 Kassel boasted 100 rose varieties³⁴, about 40 more than was usual in German gardens.

Schönbusch near Aschaffenburg

A young gardener with close ties to Kassel was **Christian Franz Bode** (1751/52-1826), the head gardener at the landscape park at Schönbusch near Aschaffenburg from 1783.

Schönbusch was a part of the summer residence of the Elector and archbishop of Mainz, Friedrich Carl von Erthal.

We know that Bode arrived here from Kassel in 1781, and it is thought that he brought with him roses or cuttings. In any event, he was given the task of buying plants in Kassel-

Weißenstein/Wilhelmshöhe, and his journeys and the letters between him and Schwarzkopf are proof of the collaboration between these two head gardeners.³⁵

The 104 rose varieties listed in the Schönbusch plant inventory represent roughly the number of varieties in Kassel in 1777. The roses in the „new assortment“ mentioned in the Schönbusch inventory include varieties that clearly had the Weißenstein pleasure garden as their source and must be considered Schwarzkopf-bred roses.

Examples of these are:

‘Pourpre de Weissenstein’, ‘Ornement de Weissenstein’, ‘Aimable de Weissenstein’, *Rosa damascena* ‘Papaverina Minor’, ‘Surpasse Singleton’, ‘Ma Favorite’, ‘Triomphe’, ‘Mignonne’ or *Rosa centifolia* ‘Regina’.

³² see Böhm-Krutzinna 2015

³³ see Staatsarchiv Marburg: Bestand 53f Nr. 582

³⁴ see Böttger, Christoph Henrich: Verzeichnis derjenigen Bäume und Sträucher. Kassel 1777

³⁵ Albert, Jost: Ein Pflanzenverzeichnis für den Landschaftsgarten Schönbusch aus dem Jahr 1783, in: Zandera 25 (2010), Nr. 2, p. 76

It is probable that most of the other roses in the “new assortment” of the Schönbusch garden are roses bred by Schwarzkopf, especially if these do not appear in any earlier catalogues.

Examples include:

‘Agreeable’, *Rosa alba* ‘La Respectable’, ‘Jolie’, ‘Gracieuse’, ‘Violette Nouvelle’, ‘Coeur Tendre’, ‘Flamboyante’, ‘Feu Amoureux’, ‘Beauté Tendre’, ‘Illustre Beauté’, ‘De Parade’, ‘Passe la Reine’, *Rosa gallica* ‘Incomparable’, ‘Belle Parade’, ‘Soleil Brillant’, ‘Belle sans Flatterie’, ‘Manteau Pourpre’, ‘Aimable Rouge’, etc.

Some of these roses were so beautiful that they are to be found still today in gardens and rose collections.

This list is extremely important because there is no complete index of the roses growing in Kassel’s Weißenstein park around 1785.

Weißenstein/Kassel

Indeed, Conrad Moench (1744-1805), Professor of Botany in Kassel, issued a commercial catalogue of plants in the Weißenstein nursery in 1785 which reported that there were 150 rose varieties available. But he described only a few of the new roses. In particular, he mentions seedlings of the so-called *Rosa belgica*: ‘Polyanthos’, ‘Ma Favorite’, ‘Pyramidalis’, ‘Papaverina Minor’, ‘Ma Mignonne’, besides the Centifolia ‘Regina’, the Gallica ‘Papaverina Major’ and the ‘Calycina’.³⁶ Some of these varieties, however, are strangely not listed in the nursery’s 1805 catalogue, which offered only 77 varieties, one of which, ‘Perle de Weissenstein’, can still be found in the park.³⁷

So why was there such a drastic reduction in the number of rose varieties grown in Kassel?

Soon after the publication of the Weißenstein nursery’s catalogue, Landgrave Friedrich II died in autumn 1785. Shortly thereafter his son and heir Landgrave Wilhelm IX ordered the pleasure gardens to be transformed into a landscape garden. From 1798 onward the park was called “Wilhelmshöhe”.

As head gardener Schwarzkopf was responsible not only for the usual tasks associated with this position but he now had a new longterm responsibility for overseeing and planning the new park plantings, for earthworks and the building of paths.

In all likelihood the gardener’s overburdening is what accounts for why some of the more delicate varieties were lost. Besides, Schwarzkopf also had a personal motive to pare down the list by eliminating some “sister roses” derived from the same crosses. Indeed, Professor Moench had undiplomatically remarked in the 1785 commercial catalogue that a part of the rose varieties were remarkably similar.³⁸

This was tantamount to labelling Schwarzkopf a braggart, indeed a conman! Perhaps this is one of the reasons why Schwarzkopf never wrote in detail about his roses.

Some indication of what these roses were can be found in the paintings of Salomon Pinhas, official artist to the court at Kassel. The 133 water colours he painted show species and varieties of roses that could be found in Kassel before 1806.

Moreover, Salomon Pinhas, who was a miniaturist, amazingly hid – not only on the title page but in the rose paintings themselves – countless tiny portraits of his contemporaries that are only visible with a magnifying glass!³⁹

³⁶ Moench, Conrad: Verzeichnis ausländischer Bäume und Sträucher des Lustschlosses Weißenstein bey Cassel. Frankfurt/Main, Leipzig 1785, S. 111 ff. (Bayerische Staatsbibliothek)

³⁷ Sennholz: Verzeichnis derer Bäume und Sträucher die in der Baumschule zu Wilhelmshöhe verkauft werden. Kassel um 1805, p. 10 ff. (ULB Sachsen-Anhalt)

³⁸ Moench 1785, p. 124

³⁹ see Böhm-Krutzinna 2015

But let us return to rose breeding:

Were roses bred by artificial pollination before 1800?

Knowledge of this method of breeding was widespread in Germany at this time and was widely practised to obtain florists' flowers.⁴⁰

Not surprisingly there were religious and ethically motivated objections to such a procedure and several breeders therefore shrank back from describing their work too precisely.

Pious Christians were horrified at the idea that breeders might want to imitate God or improve on his creation. And they were not alone: the botanist Siegesbeck, Wolfgang von Goethe or the philosopher Hegel are examples of people who criticised the sexual theory of plant structure, finding it squalid suddenly to pronounce plants they had hitherto considered "pure" now to be thoroughly polygamous and thus indecent. They found it repulsive to think of male and female sexual organs located close together in a bloom – and pollination of flowers reminded them of the sexual act between humans.

There were, however, enthusiastic flower lovers who, from 1765, did write about their breeding attempts using artificial pollination. Their passion for collecting florist's flowers was like an addiction and their favourite flowers were hyacinths, carnations, auriculas, stocks or ranunculus. One of these was the Pastor Franz Hermann Lueder (1734-1791/92). Before 1768 he carried out crosses with strawberries, melons, spinach, stocks and above all carnations.⁴¹

Many of these aspects that are worth taking seriously were certainly known to Schwarzkopf as he began to breed roses in 1773. Since childhood he had had to present himself to his various patrons as a person of impeccable behaviour. So it would in any case have been safer for an ambitious head gardener to avoid exposing himself to any criticism and just talk of sowing the seeds of rose hips. Naturally sowing followed by selection was also a good way of obtaining useful or beautiful plants. But it can't have taken long for Schwarzkopf to have come into contact with the idea of plant sexuality and artificial pollination in discussions with his colleagues and teachers.

The artificial pollination of roses would have been very easy for him. He would just have had to cut off the filaments of a rose bloom and brush the pollen of another rose onto the stigma of the mother flower. The pollinated bloom then needed only to be protected from further pollination attempts by insects. This would have been simple if the rose was in a pot and placed in a greenhouse or indoors for isolation.

Ludwig Julius Höpfner and other German rose breeders

A typical example of a breeder of those times, who was clear about the rejection of artificial pollination, was the lawyer and Tribunalrat **Ludwig Julius Höpfner** (1743 – 1797) of Darmstadt. He was a friend of Goethe's and described by his colleagues as amiable, intelligent and hard-working. A man of many interests, he read widely, was an accomplished turner and collected almost all the roses then in commerce.⁴²

Since no one knew which were rose varieties, which were hybrids or species, Professor Höpfner sowed their seeds. He also crossed species.

⁴⁰ see, for example: Lueder, Franz Hermann Heinrich: Fortsetzung der in den Briefen über die Bestellung eines Küchengartens gegebenen Anleitung. Hannover 1776, p. 244;

Hirschfeld, C. C. L.: Gartenkalender 1782. Kiel 1782, p. 190 ff.

⁴¹ see Lueder, Franz Hermann Heinrich: Fortsetzung der in den Briefen über die Bestellung eines Küchengartens gegebenen Anleitung. Hannover 1776, p. 244 und: Briefe über die Bestellung eines Küchengartens. 1. Teil, 3. Aufl. Hannover 1778, p. 260

⁴² Wenck, Bernhardt: Höpfners Leben. Frankfurt/Main 1797, p. 76

So as to avoid giving cause for criticism, he did not pollinate the mother plants by hand but planted two suitable rose bushes close together and then removed the stigma from, for example, *Rosa foetida* – something that was not actually necessary.

Using a Pimpernell Rose as a mother plant, he pinched off the stamens to prevent self-pollination and then tied the blooms of *Rosa foetida* onto those of *Rosa pimpinellifolia*.

By the way, cutting off a rose bloom and then tying it onto another in order to induce pollination, was one of the breeding methods of the Catalan rose breeder, Pedro Dot.

The hybrid resulting from the foregoing example, “*Rosa pimpinellifolia* Linn. x *R. chlorophylla* Ehrh.” was in all its aspects halfway between its two parents, the flower was yellow blended with pink.⁴³ Evidently Höpfner succeeded in his crosses, creating considerable excitement in his day. Unfortunately Höpfner was not able to evaluate his experiments as he fell seriously ill and died a few years later. It is doubtful that any of his roses were ever in commerce.

But new rose varieties were bred not only in Hesse but in Eastern Germany around 1800. In his gardener’s catalogue of 1804, the merchant **Johann Carl Corthum** offered the rose ‘Schöne Zerbster’, described as “*very bright red, a colour found in no others. It bears beautiful wellfilled blooms,[...]they grow to a height of 2 to 6 feet.*”⁴⁴

The first German rose breeder to admit to the artificial pollination of roses was **Dr. Bernhard Stiehler** of Dresden. His breeding activity began in 1815. In a short article in the *Allgemeine Deutsche Gartenzeitung* in 1827 he informed readers of his successes and experiences in rose breeding. He had already come to recognize that in most garden roses it was necessary to remove the stamens before the flower opens its petals to prevent self-pollination.⁴⁵

Let me sum up briefly:

In the Baroque period garden roses, usually imported, were certainly much valued in Germany as they had been since the Middle Ages, but there was a relatively narrow range since they were rarely used for breeding. Only when the English landscape garden became fashionable were new rose varieties produced – above all in England after 1740. Starting in 1773 the German head gardener Daniel August Schwarzkopf also bred a wider range of roses, some of which were given French names.

The inclusion of these new roses by Dutch gardeners in their international sales catalogues initiated a new enthusiasm for roses, which was to lead to the rose becoming one of the most loved of all flowers.

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Translation: Andrew Hornung

⁴³ Borkhausen, Moritz Balthasar: *Botanisches Wörterbuch der Botanick*, 2. Bd., Gießen 1797, p. 143

⁴⁴ Corthum, Johann Carl: *Catalogus von Bäumen und Sträuchern*. Zerbst 1804. p. 74

⁴⁵ Stiehler, Bernhard: in: *Verhandlungen des Vereins zur Beförderung des Gartenbaues*. Berlin 1827, S. 208

Changing gardeners' views of growing roses - the future of rose gardening

Paul Hains, Australia

Abstract

This lecture aims to address the way the world has changed and how rose enthusiasts can respond positively. A high rate of urbanisation has had an impact on households, properties, and peoples' gardening activities. Society is filled with smaller allotments of land and time-poor citizens less committed to their gardens. Technology is also changing exponentially with rapid adoption of new technologies by younger generations. Rose enthusiasts and garden clubs need to embrace these changes to engage with future generations. Failure to do so will see the demise of gardening groups as younger generations turn to other sources for information or abandon gardening. The presentation will discuss climate change and its impact on rose growing with potential increases in diseases and longer growing seasons. Environmental changes and social concerns have changed attitudes to chemical spraying and rose growing. The roses being produced now are much more resilient to both pests and diseases. The challenge is communicating that to the public and to those who sell and distribute roses. Rose enthusiasts must change the way they talk about growing roses. There is a need to embrace and encourage diversity in roses. This also means looking at how rose societies plan activities to better engage younger generations with more interactive experiences. Rose enthusiasts have the ability to create demand for new roses and for rose growing as a hobby. The aim for this lecture is to provide some insights and inspiration to help more people love roses the way that you do.

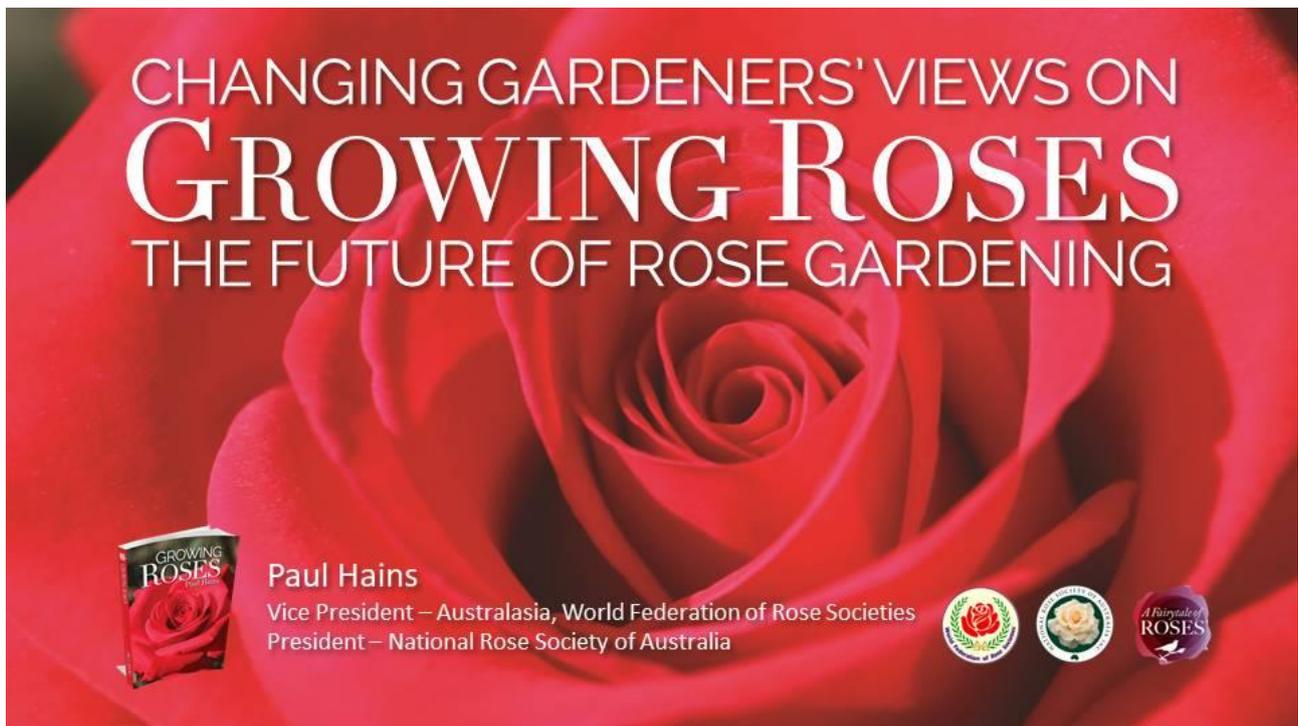


CV

Paul Hains is Vice-President (Australasia) of the World Federation of Rose Societies, President of the National Rose Society of Australia, and President of the Queensland Rose Society. He is also the Editor and Webmaster of the National Rose Society of Australia and Chairman of a WFRS subcommittee.

In 2017 Paul received the Australian Rose Award, Australia's highest rose society honour, in recognition of his contribution to roses. He has been an invited speaker and international panel member in the USA, South Africa, India, and China.

Paul is best known for his books, garden talks, and talkback radio. His books "Growing Roses in Subtropical Climates" and "Growing Roses" are sold by rose societies in Australia for fundraising. As a successful rose breeder, Paul has received awards from the trial gardens in Australia, including a Gold Medal. His roses are commercially available through Australia's largest rose introducers.



Today we will look at how the world we live in is changing. I will show you how, as a rose enthusiast, you will directly influence the future of rose gardening. I hope that this lecture will challenge how you think about roses and rose societies. If that happens, then we are well on the way to changing gardeners' views on growing roses.

Sociocultural Changes

Let me start with the changes that are happening in society. There are many different generations represented in this room. We start with the builders, or the greatest generation as it's also been known, born before the end of World War II in 1945. The majority in the audience here are Baby Boomers who are now 54 to 73 years old. Generation X is my generation and are those who are 39 to 53 years old. I'm the same age at the World Federation. Then there is Gen Y, or Millennials as they are commonly known, who are 24 to 38, and those younger are Gen Z.

For many of you, the baby boomers and builders, marriage was something you did in your 20s and children were an early priority. Your children went to school and when they finished their school years they left home almost immediately to enter the workforce and start their own families.

This has changed in recent generations. They marry later, have children later, and have more focus on their careers. Many children live at home into their 30s while they study and establish their careers. Work takes up more time as the cost of living increases at a higher rate than income. Buying a property becomes more challenging.

Why is any of this relevant to roses and changing gardeners' views? There are less young gardeners. Our young members are in their 50s and 60s as that's when they start to get some time to themselves. The cost of properties and urbanization means people live on smaller lots of land. Community gardens have become popular and many people also work as volunteers in larger public gardens, such as we see in Australia and I have witnessed in the USA and South Africa recently.

A recent market research report highlighted that concern about chemicals in the lawn and garden followed a concern of cost and time as the top three gardening challenges.

Let's look at time concerns. People who are time poor make decisions on what they do with that time. In economics it's called opportunity cost. If you do hobby A, then you may not have time for hobby B, so you make a choice as to which one gives you the most pleasure, or perhaps which hobby is the easiest. It's about the hobby that gives you the best return on investment. How difficult is rose growing compared to growing other flowering shrubs? We will look at this further in the presentation.

Food gardening is a huge growth area in gardening. People are demanding to know what's in their food, whether it was treated with fungicides and pesticides, was there any genetic modification? Their need for clean food drives a desire to grow their own. However, they give up quickly when they realise that their clean organic tomatoes that cost them \$100 for the potting soil, garden borders, stakes etc. and lots of hours to grow over a period of months, could have been bought for \$3 at the shops...

Wealthy, educated people are the main group who would call themselves gardeners. All of you in this lecture were able to afford to travel here and have the time to do so. Many of you flew in business class, are staying in luxury hotels, and enjoying the best food and wine on offer in Copenhagen. There is nothing wrong with that either! I am just highlighting the demographic for rose growers represented here.

Gardener demographics will be different in various regions and countries. The most important thing is to encourage rose growing for everyone. I would encourage you to look outside your current demographic group and see if you need to offer activities to those with less education and wealth.

Talk to everyone who expresses a love of roses and look for the opportunities for them to be involved. Let's also look how we can involve people in public gardens, as many do not have the land to grow their own plants. Can we also encourage roses suitable for pot culture for those who rent their housing?

New gardeners are younger and more mobile. Flower gardening is a huge industry but many are scared by all of the rules that go with growing roses. They seem so difficult. Are other flowers perceived as easier to grow?

If we are able to show them the benefits of rose growing, the simplicity of roses if you throw out a few rules, and how you can do this with your kids, then you start changing the way rose gardening is perceived.

Technological Changes

Technology grows at an exponential rate. It's presented to us in a linear format, ie, iPhone 3, 4, 5, etc. This is because we perceive things in a linear way and don't comprehend the huge growth in technology between these generations. To put this in perspective, the Cray 2 Supercomputers from my final year of high school ran the nuclear program, and NASA's space exploration program. They cost €26 million each in today's money and weighed 2500 kg. My watch has the power of two of them and has GPS built in.

The challenge with exponential growth is that organisations change slowly. The World Rose Conventions are held every 3 years and many major committee decisions are only made at that 3 year point, or even postponed to the next Convention so a new Chairman or committee can evaluate them. The change in technology, as well as culture in many cases, moves so much faster than this. Organisations find need to modernize and meet new challenges or they fail and cease to exist, as we have seen with many gardening groups. The reality is that being more adaptive to change and adopting agile management practices in the running of our societies may not be enough.

The graph shown on the screen demonstrates how a revolutionary change may be needed to jump up the curve of technological and social change to reset the organisation's trajectory. This may require adopting a wide range of changes at once. We will examine how this can help to change the future of rose growing in the rest of this presentation.

Banking

Wire transfers originated in the 1872, although becoming more accessible to individuals as electronic funds transfers in the 1960s with the introduction of ATMs. Credit cards were introduced in the 1920s. PayPal was developed as a money transfer service in 1999. In 2007 the first contactless credit cards were issued and in 2011 mobile phones were able to be used for contactless payments. By 2016 you could use a watch to pay for goods at retailers and in the same year the technology became available in coffee cups. We are becoming a cashless society. I don't even have a space for coins in my wallet.

Many rose societies around the world only accept cheques (introduced 1st Century BCE) and cash (600-650 BCE). There has been a more recent move by societies to "modernise" and make available electronic transfers (1960s). This technology is older than the WFRS.

We need to radically update our practices to enable new generations to participate. At rose shows people come in the front door expecting they can just tap their credit card and enter. Millennials and Gen Z will not own a cheque book and will be less willing to go through a process of transferring money, especially in different currencies as we do with the World Federation. They expect to just use their credit card or tap their phone/watch/card to gain entry to events or pay for memberships. If you want to change people's views on rose growing, you need to enable them to participate.

Social Media

Social media is rapidly changing. Facebook has been under enormous scrutiny this year with the admission that they have been monitoring messages and selling personal information to third parties. This has sparked a large backlash against the largest social media organisation in the western world.

Social media was overtaken by social messaging in 2015 while we were attending the last World Rose Convention.

I mentioned Facebook and its challenges on the last slide. The format is also significantly behind the newer technologies with Facebook purchasing other formats to stay relevant. Younger generations see Facebook only as a way of communicating with their parents and grandparents. They don't use it routinely. Twitter is struggling to remain relevant and it tipped to need a major overhaul to survive 2018.

Over 250 million people use Instagram Stories every day. This is where a series of your photos and videos are displayed like a slideshow and then disappear at the end of the day. Video content is now the most popular social media content. If we want to introduce people to rose growing for the first time then we need to look at how we reach them. You need a broad reach.

Websites

By the mid 1990s it was essential for any major company to have a website. These sites resembled a book format with basic menus, lots of text, and a few small photos with low image quality. If you look at today's websites that grab your attention you will notice they have video, high quality images, and interactive components. A box may open up with a person's face and name asking if they can assist you. There isn't a person on the other end. It's a cleverly written piece of computer code that is able to answer enquiries and ask you follow up questions. The webpage may also have social media feeds that show live conversations happening about the business.

I hear people in rose societies say, "Why would people come to a meeting if they can get the information online?" The point is, this information is almost guaranteed to be available online somewhere. What do people get from attending an event that they can't get online? How much more can they understand by

interacting? How do we adapt to make sure our events are engaging and provide more? Can we also provide memberships to those who aren't interested in attending but may use online help? Is our goal to encourage rose growing, or is it to grow the size of our membership? These are some of the questions that need to be answered to help us encourage rose growing.

Communication

We need to review how we distribute our information. Are we sending everything out by mail still? Can we embrace new technology to engage more directly with a broader group of rose enthusiasts? We should look to the future as we adapt to new technologies. However, we must not leave people behind in the process. Remember to make sure those who aren't literate in technology don't miss out.

Environmental Changes

The physical environment we live in is changing. I'll talk a little later about the breeding practices and the introduction of more disease resistant roses. What we clearly see is a rising environmental consciousness. People have concerns about cancer risks from chemicals and about creating a better future for those who will be living here long after we are gone.

As a regular speaker at garden clubs and large garden expos, the first question I always ask is, "Who wants to grow roses organically?" It's always met by a 30 to 50% response. The perceived need to use chemicals is a major reason why many people don't grow roses. This is a perception that you are able to change through how you present this need to the public. We will explore this more later in the presentation.

Climate Change

There are many climate change sceptics who don't believe the science or notice changing weather patterns. However, history is demonstrating an increase in average temperatures over time. This is changing the growing seasons through an increase in photosynthesis rates.

What this means is that you will have flowers for longer, but the bushes may wear out sooner as they work harder to produce more blooms. We see this in the subtropics where we could leave our roses to bloom 12 months of the year if we didn't give them a forced prune in mid-winter. We still have 10 months of blooms. As our climates continue to change we will need to look at how we talk about growing roses to those new to the hobby, as well as those who have been growing roses for a lifetime.

Diseases

Increasing temperatures with greater humidity creates a breeding ground for fungal disease. This can mean growers will start looking at preventative control, or seeking out more disease resistant varieties.

If we want to change gardeners' views on rose growing and champion the rose as a perfect flowering garden plant, we need to communicate with retailers to make sure they are stocking the best roses for the climate we live in. Too often I see roses for sale in local stores that won't grow well where I live. This is up to me to change, and to our rose society. Why do we not communicate with those stores' buyers to ensure they only have appropriate roses? Likewise, gardens in your regions should be updating and planting roses suitable for your climate. It's up to you to make sure they make good choices.

When you ensure that the right roses are selected and demonstrated, you will start to change people's views on roses. If they buy a good rose that grows well, they will have a good experience. If they see roses growing well in gardens, their expectations of rose growing are good.

Pests

Higher temperatures have been shown to increase the speed at which many insects complete their lifecycles. This means a higher level of infestation and also a need to consider pest resistance in roses. A good example of pest resistant plants is the Australian 'Lilly Pilly' (Syzygium) trees where some varieties have been shown to be resistant to psyllids, a tiny insect that disfigures leaves.

In rose trials, pest resistance is evaluated. The question is how this is promoted in post-trial marketing, and whether there is a perceived value in this from gardeners. We also need to adapt our practices to offer organic alternatives and to be conscious of concerns over destruction of bee colonies with certain pesticides. Encouraging heavy use of chemical insecticides for every day gardeners is going directly against current gardening trends and will encourage less rose growing.

Other climate change impacts

As weed growth rates increase and periods of drought become more commonplace, we need to encourage mulching practices and the use of tough, low maintenance roses. Roses are very drought resistant. They won't give their best without water, but they are survivors. It's all about recommending the right roses for the climate and good, simple cultural practices.

Changes in Rose Breeding

I mentioned earlier that rose sales started declining in the 1980s. There are two things I can directly point to with this. Rose breeders had routinely used fungicides on their new rose seedlings in their trial grounds. This meant they got to see all of their plants in perfect conditions and were able to choose plants with the perfect flowers. What they didn't get to see was how disease resistant those plants were. As gardeners did not always follow perfect preventative spray regimes, fungal disease was evident in these roses when conditions were just right. To compound this, gardeners began to reduce their use of fungicides in the garden and saw an increase in disease amongst their roses. Roses then became seen as temperamental and difficult to grow with clean foliage and rose experts told them clean foliage was critical.

In the late 1980s, new generations of rose breeders came through and stopped using fungicides in their breeding programs. The immediate result was fields of diseased plants in their trial gardens. However, there were those that showed clean foliage within the fields.

More disease resistant roses started appearing in the 1990s and these were also used in future rose breeding to create stronger plants.

Unfortunately, many of the earlier roses with poor disease resistance are still widely distributed and do little to demonstrate that roses are easy to grow. This is where you come in. Educating retailers, and gardeners on what roses to grow for your area is critical to change the public perception of rose growing.

Changing your view of roses

The video clip from the movie "The Matrix" shows Keanu Reeves bending a spoon with his mind. He had to reset how he viewed the spoon.

This is a metaphor that you can't change the world around you, you can only change yourself. In changing yourself the environment around you will then be altered.

You cannot expect people to view roses as an easy to grow flowering shrub, if you hold onto the view that there are all of these rules you must follow. You must open your mind to growing roses in a simple manner so that you might encourage others that they can too.

You also have to accept that all roses are of equal value if you want to encourage people who may love of rose that isn't something you like.

You still need to guide them to grow something suitable for the climate they live in.

The following statements need to be banned from your language when you talk to people about roses:

- Roses are not for beginners
- Growing roses is time consuming
- Roses are hard work
- You need to prune/spray/fertilise the traditional way
- You need to make a real commitment to grow roses
- You must spray with chemicals
- You should never spray with chemicals
- That doesn't look like a real rose
- They aren't roses, they are weeds
- Only heritage roses are real roses

Good roses are great garden plants

Let's look at how great roses are as garden plants. They only need a soil with neutral pH, not super acidic or alkaline. They aren't scared of potash like our Australian natives. They are drought tolerant and most will flower year round. They come in a high range of colours and sizes and can suit any garden. They grow well in pots. What isn't there to love? You can even get thornless ones if that's important to you.

I like to tell people at garden shows to treat a rose like any other flowering bush. I get a little black soot on my gardenias at times and don't use any controls for it. If you have good disease resistant rose, then it's going to eventually get a little disease, but it's unlikely to cause serious harm. Organic controls will work well if you choose good roses in the first place. If people want perfect florists' roses then they will need a little more work, but we need to focus on what the average gardener wants.

For those of you who don't know, I am a sales person by profession. The traditional method of sales was to sell a customer why they need what you have on sale. The sales person doesn't ask you what you want. This doesn't work well in today's society with more access to information and more options available. Customers are more educated and have an idea of what they like.

You need to ask people what they know about roses, what they want to use the roses for, and what sort of roses they would like to grow. You can't just tell them they need to grow hybrid tea roses, or the only roses they should consider are heritage ones. First, look at their needs, their time availability, and the space they have to grow them in. Then find them a solution that works.

Roses for Everyone

Old Fashioned

Let's look for a moment at the different roses you can show people to encourage them to rethink their views on roses. When I joined the rose society, I only knew hybrid teas. I have never thought of anything else as a rose. I now grow species roses and old garden roses and breed with them.

The last 50 years have seen a growth in modern roses with the look of the old gallicas and roses of the past. These have been very popular with gardeners for their fragrance and form. There is more than one breeder of these styles so you can encourage people to look beyond the well-advertised brands.

While the old fashioned style often have weeping flower heads like old garden roses, rose breeders have been working on roses that have an old fashioned flower shape, but with long pickable stems like hybrid teas. I saw these promoted on a recent trip to South Africa where Ludwig's Roses call them "Antico Moderna". The rose pictured is one I have bred in this style that will be launched in Australia later this year and has a strong old rose fragrance.

Newer styles

The 'Knockout' rose by Will Radler in the USA changed the rose growing world when it was introduced in the year 2000. It was credited with sparking a new interest in rose growing that had been on the decline for decades. The emphasis of this new rose was low maintenance. I talked earlier about the need for low maintenance, disease resistant roses. Some rose society members struggled with 'Knockout' as it didn't look like a traditional rose. In fact it really is more traditional, looking more like the early species roses that were the ancestors of hybrid teas. With little care needed to grow it, this rose has been a great option for new rose growers.

Novelties

Novelty roses have been of strong interest in the last 5 years or so. 'Eyes for You' introduced the wider public to *hulthemia persica* hybrids, even though these roses have been around for some time. While people find these fascinating, they have presented a commercial challenge as people still like their traditional florist style roses. I have found introducers in Australia referring to the *hulthemia persica* hybrids as flowering plants, and leaving out references to them being roses. They are concerned that the buyer may think it's going to be hard to grow because it's a rose, or that it doesn't look like a rose so customers may not want it.

The big question is how these novelties stand the test of time and perhaps that is a questions the breeders' panel will answer in the forum tomorrow.

Hybrid teas, floribundas, etc

The great thing about roses is that there is something for everyone. Perfume is making a comeback as the public have been crying out for this. As a breeder, the first thing I do with a new seedling is smell the flower. No perfume on a white or pink rose means instant elimination from further testing. The clue is to encourage people to select a rose that they like, and to make sure that it will grow well in their situation so they get a great experience.

Old Garden Roses

For people with a need for low care roses, consider pointing them towards old garden roses that have great disease resistance. Just be quick to ask them how much space they have first.

Trial Gardens

Trial gardens can be a great way to test new roses. The trial ground is most relevant to people growing roses in a similar region. A trial ground in a cold winter climate may not show up the same disease patterns as one in a warm humid climate. There is a need to test roses in different climates and soil conditions if they are to be sold in different regions.

There is also an onus on the trial gardens to educate the public on disease and pest resistance and to promote the value in the strength of these varieties as garden plants. This is often left to the rose introducers to promote the value of their roses. A multi-pronged approach will be best to improve the perception of roses in the broader gardening community. Trial ground promotion shouldn't stop once the medals are given out.

The future – rose societies

I began this presentation by talking about the future of rose growing. I said I would challenge how you think about roses and rose societies. Hopefully, you are starting to think more about what you can do to change gardeners' views of rose growing.

Your new rose society members will mostly be in their 40s to 60s. If you want to encourage them to participate, you will need members of a similar age in leadership roles. This is not to be critical of older generations but you also need to consider bridging that gap to the Millennials and Gen Z gardeners. That is a large age gap to cover. How many younger members join enthusiastically at a rose event and then you see them one more time before their membership expires? When they see younger people in leadership, it encourages them to be more involved.

My wife and I joined our society a little over 10 years ago while in our late 30s. I was quickly elected Secretary of the club but I resigned after 2 years because I grew tired of hearing, "This is how we have always done it" or "we had hundreds more members in the 1980s" from members on our committee. The inflexibility to adapt and change became a roadblock. I'm sure this is not the case in your societies, and I am pleased to say it is (mostly) no longer the case in ours.

I want to emphasise how important is to adapt or you will lose your future leaders. Don't wait for them to have "done their time" but support them in their role instead, and listen to their ideas and move forward positively. Remember how quickly the world is changing and how we need to rethink our world or get left behind? Younger generations will not wait 10 or 20 years to have the opportunity to make changes.

The format we have today is a lecture. When I attended university in the 1980s, lecture format was the way things were done. Now the lectures are online and attendance at university is a more interactive experience. Younger generations are looking for an experience.

They can download and read a lecture in their own home if they want. They won't sit still for that long in a lecture hall if they don't have to. They will go out of their way to do something that is hands on. You can't get the feedback from a lecture that you can from a small group workshop. Just remember, they will have their phones and will want to film the experience too. Be open to this and make the experience one they can be directly involved in. If you are showing them how to prune roses, hand them a pair of secateurs and help them to prune. You can't get that online. Millennials will also spend money to attend. Your events could be free for members and a cost for non members? Just make sure they can use electronic payments with a credit card/phone/watch to pay.

If you are doing a presentation, use images and an actual prepared presentation where possible. This lecture was done in PowerPoint, which is an older technology, as this is the format available for the Convention. There are other 3d presentation programs available that can create a more engaging presentation for the audience. Incorporate videos into your presentations too.

We can also create apps. What about a rose society app that tells you when to fertilise, water, or prune your roses? There will be so many options in the future and we need to be able to rapidly adapt to not be left behind.

Create the demand for roses

We need to take it upon ourselves as rose growers to create the demand for roses and to create demand for good, health disease resistant varieties. People buy what they know. It's up to us to help them get to know some different varieties. Be a rose growing advocate in your everyday life.

How do we work to create demand? We must become media savvy. Work with gardening media personalities in your region. Better still, why not become a media personality through regular work with press, television, and radio? Provide material, roses, fertilisers, and support to your media personalities to encourage them with promoting roses. You are a sales person a fantastic product called roses. You have varieties to meet everyone's desires and needs. It's up to you to do the marketing and sales.

Celebrities can be excellent ambassadors for roses. You can work with breeders and rose introducers to name new varieties after celebrities or charities. The critical thing is to make sure that you are using a good rose that grows well in all climates it will be sold in. Sometimes, this will be the first time someone buys a rose. We want it to be a great experience for them. If the rose doesn't grow well, then they may be lost to roses forever and will tell all of their friends. A good first experience will generate a love of roses and great word of mouth marketing.

Embrace a broad view that your role is to encourage rose growing, not to build your rose society. If you build a rose growing community, membership will grow too.

Build a great website and have a young member run your social media.

Most importantly, be open to new ideas and actively ask for them.

How do we change gardeners' views on growing roses?

That's up to you

The Poulsens & their Roses: Past, Present & Future

Charles Quest-Ritson, Great Britain

Abstract

The Poulsens have for 100 years been the most important rose-breeders in Scandinavia. It is difficult for a nursery with a small home market to achieve international eminence. The Poulsens have succeeded through innovation (they invented the Hybrid Polyantha roses that were the forerunners of modern Floribundas), by trade-marking their family name ('Ellen Poulsen', 'Karen Poulsen', 'Poulsen's Yellow'), by introducing roses of unique character and horticultural value ('Irene af Danmark', 'Chinatown', 'Nina Weibull') and by ensuring that their roses were hardy enough to sell in the cold-climate markets of North America, Germany and Central Europe.

Over the last 30 years, Pernille Poulsen and her husband Mogens Olesen have developed a wide range of roses that can respond to every commercial need. Whatever the type of rose required (climbers, miniatures, Hybrid Teas with old-fashioned flower-shapes) and for whatever purpose (groundcover, landscaping, flowering potfuls for supermarkets) Poulsen offers them in every size and in every colour or shade. Some of these modern products achieve great popularity while others are seldom seen. Nevertheless, breeding continues - and newer, better cultivars replace them frequently so that their market slot is always filled by roses that meet the expectations of buyers.



CV

Charles Quest-Ritson is an author and translator but perhaps best known among rosarians for the Encyclopedia of Roses that he wrote with his wife Brigid and was first published in 2003 and translated into six languages. He also wrote Climbing Roses of the World (2003) which is the most comprehensive treatment of the subject to date. He was for some years a director of the Royal National Rose Society but resigned in 2000. He also chaired the Historic Roses Group in UK and was a member of the RNRS's Trials Committee for 12 years. He loves all roses, old and new, and has two gardens in which to grow them - one on chalk soil in southern England and one on sandy clay in Normandy.

The Poulsens and their Roses: Past, Present & Future

There are two parts to the story of the Poulsens and their roses. First, there is the company founded by D.T. Poulsen in 1878, which went bankrupt in 1982. Second, there is Poulsen Roser, the company created by Pernille Olesen (née Poulsen) and her husband Mogens from the ruins of the old company. It is now one of the most innovative and exciting rose-breeding enterprises in the world today.

Dorus Theus Poulsen [1850-1925] was a lawyer's son. He trained at Denmark's Royal Veterinary and Agricultural University (Den Kongelige Veterinær- og Landbohøjskole) and opened his nursery on Roskildevej, the main road running west from Copenhagen towards Roskilde. It was at first a market garden, providing fresh produce for the inhabitants of the capital city. Roses were never one of D.T. Poulsen's interests, but plant-breeding was: he introduced improved strains of soft fruit, vegetables and herbs.

D.T. Poulsen's three sons joined him in the business. The eldest was Dines Poulsen [1879-1940], who developed the production of trees and shrubs for the public places and private gardens of the expanding city of Copenhagen. Between 1907 and 1920, the family bought four farms in the area around Helsingør to grow on its stock. For some years D.T. Poulsen was the largest nursery in Scandinavia. Dines had done a *stage* at Peter Lambert's nursery in Trier. He then spent a year in England, where he dabbled in rose-hybridising, copying what he had learned from Peter Lambert. He took the Polyantha 'Mme Norbert Levavasseur' as the seed parent and used pollen from the well-known rambler 'Dorothy Perkins'. Some of the offspring - 'Seelandia' [1913] is an example - were fairly conventional ramblers of which, at the time, there were already far too many. But Dines's seedlings did include a good Polyantha - 'Ellen Poulsen' [1911] - which became an important ancestor of further roses.

More importantly, Dines crossed 'Mme Norbert Levavasseur' with a Hybrid Tea (probably 'Liberty' [Dickson, 1900], though there is some doubt about this) to produce 'Rødhætte' [1912], the first true Floribunda rose after 'Gruss an Aachen' [Hinner/Geduldig, 1909]. 'Rødhætte' remains a popular rose in Scandinavia, and still deserving of wider cultivation elsewhere.

Dines Poulsen's interest in rose-breeding was taken over by his youngest brother Svend [1884-1974], who bred and introduced about 50 roses between 1916 and 1962. His first experiments were with 'Orléans Rose', a prodigious seed-setter, which he crossed with pollen from Hybrid Teas: 'Else Poulsen' [1923] and 'Kirsten Poulsen' [1923] were both seedlings of 'Orléans Rose' crossed with 'Red Star', a semi-single Hybrid Tea from Verschuren that is now extinct. 'Karen Poulsen' [1932] was in turn a seedling of 'Kirsten Poulsen' backcrossed to a single red Hybrid Tea from McGredy called 'Vesuvius'.

Svend Poulsen called his new roses 'Hybrid Polyanthas'. They were not the immediate success that might be expected. He wrote that 'in 1924 we exhibited 'Else Poulsen' and 'Kirsten Poulsen' at the National Rose Society's show in London, but it took several years before the public accepted them as being real Roses.' Naming their roses after the wives and many daughters of the Poulsen family was good promotion and helped to make the roses better known. Later on came 'Poulsen's Yellow' [1938], sometimes called the first yellow Floribunda, though its colour does fade rather quickly. There were no plant patents in Europe at that time, so the Poulsens appointed McGredy as their sole agents for the British Isles, and McGredy paid them a percentage on all the plants of a new cultivar that they sold in its first three years. 'Poulsen's Pink' followed in 1939 but the Poulsens had a difficult time during World War 2 because their two best markets had always been Germany and England.

The Poulsens had hopes for the American market, where plants had been patented since 1930. In a letter dated 20 January 1940 to Horace McFarland in Harrisburg, Svend summed up the qualities that characterised his Hybrid Polyantha roses. Their beauty lay in their 'loosely built or single flowers and broad panicles'. It is worth noting that, at this point, Poulsen was not particularly interested in increasing the number of petals that his roses carried. However, his letter to McFarland claimed that their usefulness was greater than that of other roses because 'they serve best as hedges, in borders along shrubberies, as massed plantings among perennials in herbaceous borders, and last, but not least, for massed planting in town gardens, parks, cemeteries, and large gardens, where, with their continued wealth of flowers, they give better results than any other type of rose.'

Svend Poulsen probably relied upon Polyanthas as seed parents for rather too long. One of his best-known roses, 'Irene af Danmark' [1948], was yet another seedling of 'Orléans Rose', introduced 25 years after 'Else Poulsen' and 'Kirsten Poulsen'. However, towards the end of his career, Svend back-crossed his Hybrid Polyanthas to double-flowered Hybrid Teas and was rewarded by flowers with more petals. 'Poulsen's Park' [1954] is an example of this and still a first-rate Floribunda today, not as susceptible to mildew as many of the earlier Poulsen Polyanthas. And two very fine roses appeared at the end of Svend's career: 'Rumba' [1958] and 'Nina Weibull' [1962]. Both were seedlings of 'Masquerade' [Boerner, 1949]. 'Nina Weibull', in particular, is everything that a rose should be – hardy, vigorous, healthy and very free-flowering. It does not have a strong scent, but that is true of many Floribundas from the 1950s and 1960s and, in any case, 'Nina Weibull' has joined the Pantheon of roses whose popularity is still so strong today that they will always be widely grown and offered for sale.

Svend Poulsen was highly regarded in Denmark and abroad for his skills and achievements as a rose-breeder. His roses were hardy throughout Scandinavia, and they had an exceptionally long flowering season. It might, however, be said that he had only one strategy - crossing Polyanthas with Hybrid Teas - which was not his idea in the first place but one that he inherited from his brother Dines. He was not an innovative breeder. Unlike his German competitors, Kordes, Tantau and Krause, he did not experiment with rose species to bring new vigour into his breeding lines. And it might be said that he spent too much time on *pro bono* work, serving on endless horticultural committees instead of managing his own business.

Svend Poulsen's son Niels [1919-2003] joined the family firm in 1954. It is fair to say that he was a reluctant to do so - he had contemplated emigrating to the United States to escape the constraints imposed on him by family expectations in Denmark. Niels was an intelligent man, kind and popular, but not much of a businessman. In the year before he joined the business, the Poulsens had sold up their nursery on the edge of Copenhagen. This enabled them to buy out some of the family shareholders (it is well known that nurserymen make more money from property development than from selling plants) and move to an estate called Kelleris, near *Humblebæk*, 35 kms north of central Copenhagen.

Niels Poulsen got off to a good start with his white Floribunda 'Hakuun' [1962], which is short, tough, scented and very floriferous. He followed it with 'Copenhagen' [1964], a handsome red climber that was a seedling of 'Ena Harkness'. It has perhaps not had the recognition that it deserves. Chinatown ['Poulchin', 1964] came out in the same year and proved popular all over the world. It was also the first rose to be patented in Denmark. It makes a broader bush than many modern roses, and can fairly be called a shrub rose. Next year, Pernille Poulsen ['Poulper', 1965] was named for the eldest of his three daughters and reinforced the family's reputation for beautiful Floribundas. Scarlet Nordia ['Pouldia', 1967] was a Floribunda that he bred for the cut-flower trade, though it did not make a great impact; this sector of the market continued to be dominated by Meilland from France. He did better with Troika ['Poumidor', 1971], a fragrant, super-hardy, copper-coloured garden rose, but he found it difficult to breed further from it. It seemed to be largely infertile.

Looking back over Niels Poulsen's career, one could conclude that he was a competent but not outstanding rose-breeder. Although he produced a handful of roses of exceptional quality, he was not an original breeder – he did not breed groundcover roses, Miniatures, or hand-painted roses. Creative rosarians like Reimer Kordes, Jack Harkness and David Austin were producing new lines, new types of rose, to create new markets - and introducing as many as eight new roses every year. Niels was not a prolific breeder and his roses had to cope with stiff competition in the countries to which he exported. It should also be remembered that the Poulsen family had always been general nurserymen and that, for them, selling roses was more important than breeding new cultivars.

Pernille Poulsen joined the company in 1971, immediately after graduating with a degree in business administration, and in due course she took over the rose-breeding programme. In September 1971, she married Mogens Olesen, one of five sons from a family of nurserymen and garden-designers. Mogens had done a *stage* in 1968 with the Poulsen nursery and another with McGredy in Northern Ireland before going up to the Royal Veterinary and Agricultural University. When he graduated in 1973, Niels Poulsen invited him to join the business, but Mogens declined. Instead, he and Pernille made plans to travel around Europe, visiting nurseries and horticultural research stations from which they might learn of the latest ideas and research work. In the event, they spent from February to November 1974 calling on Kordes and Tantau in Germany, Lens in Belgium, Spek in the Netherlands (where they also spent some useful time at Wageningen), and Meilland, Delbard and Minier in France (where they also worked at INRA). On their return to Denmark, Niels offered once again to hand the business over to Pernille and Mogens. This time, they accepted, and Niels retired in 1976.

Pernille and Mogens were young and energetic, and they made a handsome couple. They also had a raft of new ideas. But they had inherited a company that was old-fashioned, unfocused and losing money. They laboured on for a few years and celebrated the centenary of the company's foundation in 1978 with a fine Floribunda called Poulsen's Jubilaeumsrose ['Pouljub', 1978]. Mogens Olesen explains that the main reasons for the company going into liquidation in 1982 were the introduction of an unrealistic minimum wage by the Danish government and the hike in fuel prices occasioned by the oil crises of the 1970s. But the reasons for the business's failure went much deeper. Denmark is a small country - its population in 1970 totalled less than 5 million - and its industries have to cope with foreign competition both at home and abroad. It was difficult for the Poulsens' general nursery to compete with similar producers in the Netherlands and Germany's Niedersachsen. The company had over-borrowed and struggled with bank rates of up to 18%. Income from Niels's patented roses fluctuated from year to year and was never high. The roses themselves were perhaps not good enough to compete with the stream of first-class roses coming at that time from Kordes and Tantau in Germany, Harkness and Dickson in the United Kingdom, Meilland in France, and Warriner and Swim in North America. The company was also hopelessly unbusiness-like. Niels's four sisters accounted for more than half of the share capital, but took no part in the nursery's affairs. They never discussed business and had never seen a balance sheet.

The liquidation was a messy affair. Creditors were eventually paid 65%, and that was the end of it. Young Pernille and Mogens did not know what to do, but they bid successfully for the rights attached to the roses that were patented and for the work-in-progress in the breeding houses and trial grounds. Then, in a rented greenhouse, they set themselves up in business as Poulsen Roser. From this unpromising beginning they built up the large, innovative and profitable company that is theirs today. They decided not to produce nursery stock of any kind. Right from the start, they intended that their income should come only from intellectual property: they would breed roses, patent them and then sell the right to use them.

Mogens Olesen had studied genetics at university and learned about rose-breeding in practice during his six-month stay with Sam McGredy in Northern Ireland. The tour that he and Pernille

undertook in 1974 created friendships and commercial contacts for them as well as an understanding of the economics of rose-growing and rose-breeding. They knew that they needed good products, good management, good financial controls, good marketing, good selling skills and good publicity. Certain attributes should be present in every rose: beauty, health, colour, hardiness and, if possible, fragrance. But the Olesens had also noted the trend away from planting roses as bare-root plants in winter towards selling them in pots when they are in flower. Mogens realised that the demand for traditional roses would continue to decline: twenty years ago, fifty million roses were budded in Europe every year, but now the figure is closer to twenty million. And today, in much of western Europe, some 80% of budded roses are sold in pots and only 20% bare-root.

The Olesens understood that there would be advantages in breeding roses that were grown in pots right from the start, instead of being grafted on two-year-old rootstocks and potted up - as then often happened - when they had failed to sell at the end of the winter. The new pot-grown Poulsen roses would need two further attributes that other breeders had not considered necessary. First, they should be propagated from cuttings and grown on, under glass if necessary, to produce a saleable own-root plant in a matter of months. And second, the flowers should remain in good condition for much longer: nurseries and garden centres know that a plant in full flower will sell more readily than one that displays only leaves and stems.

This was radical thinking in the early 1980s. Very few roses were grown on their own roots: some Miniatures and Polyanthas took well to this method of propagation but no-one grew Hybrid Teas and Floribundas from cuttings on a commercial scale. The new roses would have to be completely failsafe as own-root plants. This would require extra testing and, in the long run, the creation of hybrid strains that would root, grow and flower reliably. Moreover, those flowers had to remain shapely and attractive for much longer than expected in the past. The life of a rose, from the moment its buds open to the time when its petals begin to fall depends on many factors, not least the climatic conditions at the time. But, even in cool climates, it is unusual for a garden rose to look pretty for more than a week. Cultivars that are bred for the cut-flower trade, most of them grown in Kenya or Colombia, are required to last in a vase for up to two weeks. But the new Poulsen roses, grown and sold in pots, exceed that target. Eighteen days is the current standard for durability and the Olesens' aim is to extend it constantly. Since the individual flowers within a cluster will naturally open sequentially, it is now possible for a plant to remain attractive to potential buyers for several weeks, by which time more clusters will be in place to continue the display and create a plant that is indeed continuously in flower.

The Scandinavian nations have always been leaders in incorporating ecological and environmental practices into every aspect of their daily life. The Olesens -adopted a further requirement for their new roses - no chemicals should be applied to the plants at any stage in their production. This meant, of course, that testing their seedlings for their susceptibility to fungal disease should be particularly rigorous. But it also required them to select only those that grew quickly without the need for any hormonal additive to stimulate rooting.

Modern Poulsen roses are grown in pots right from the start, but they are dual-purpose roses: the person who buys one in a garden centre can decide whether to keep it growing in a pot or to plant it in the garden. Experienced amateurs would probably plant it out as a permanent feature of their garden. But the Olesens realised that there was another potential market that they could hope to access - the inexperienced novice gardener. Such people may know little about roses but want something that can be treated as decoration - a plant that will grow well, needs no special treatment and looks pretty for a long time. These roses might even be grown for a season and then thrown out. They would also suit people who had no more than a window-box or a window-sill in which to grow plants. With this in mind, right at the start of their business, Mogens and Pernille Poulsen

negotiated an order for 20,000 plants from a chain of low-cost Danish hypermarkets called Bilka. They sold out almost immediately.

Poulsen Roser therefore operates today in two markets: the traditional market, breeding roses for rose-lovers' gardens, and the newer market for potted roses to ornament house or garden. It is an area in which the Olesens have been very successful. One might say that, in so doing, Poulsen Roser is de-mystifying roses.

The company supplies rooted cuttings to wholesalers who may choose whatever range is suitable to their glasshouse regime. Poulsen teaches them the techniques required to produce a saleable product within the shortest time. In some cases, this may be as short a time as ten weeks, which compares favourably with the two years required for traditional budded stock. However, glasshouse plant production requires heating so, over the years, Poulsen has selected seedlings that fare well at lower temperatures, growing fast enough at 18°C rather than 22.5°C. And, in a further effort to simplify production, Poulsen now selects seedlings that need to be pinched out not three times but once only. They do not produce plants themselves, apart from preparing the cuttings, but they work with some twenty growers worldwide. The only condition is that they must work with Poulsen roses and no-one else's. Poulsen's sales now average at about 30 million plants a year.

Not only were the Olesens quick to foresee the importance of growing roses in pots at all stages of their development, but they also identified potential markets for a series of different types of roses. Categorisation has come a long way from the 1950s when almost every new rose was described as a Hybrid Tea or a Floribunda. New classes have emerged that represent a useful grouping for commercial and customer purposes. Mogens Olesen says that it was he who first invented the expression 'Patio roses' to describe roses that were somewhere between a Miniature and a Floribunda in character, and nowadays any description of Patio roses emphasises their ability to survive in pots and containers. But the Olesens have also applied new names to other rose types as a way of emphasising what the roses within that grouping have in common and what is distinctive about the Poulsen strains. Their 'Courtyard' roses, for example, might be called climbers or ramblers, but have been developed as a group of repeat-flowering (almost continuous-flowering) roses whose flowers are borne from top to bottom. Night Light ['Poullight', 1981] and That's Jazz ['Poulnorm', 2000] are perhaps the best-known of the older roses within this grouping, though better cultivars are now available and in a very wide choice of colours. Among the smaller roses are the 'Party' group, best described as Miniature roses for outdoor use (though most are sold as house plants), and the 'Patiohit' group which can also be grown in pots or flower beds but are slightly larger than the 'Party' group. Their individual names are perhaps less important than their function as decorative plants. One very significant group of Poulsen roses are the landscaping cultivars grown under the umbrella of 'Towne & Country Roses'. Here belong well-known and popular cultivars like White Bells ['Poulwhite', 1983] and Kent ['Poulcov', 1988] but the group has been continuously developed and is now split into three subgroups according to the height and width of the plants.

Many of the roses offered as house-plants or pot-plants for patios are retailed according to their colour. Their individual names are not important either to the seller or to the buyer. This gives Poulsen Roser the opportunity to update their catalogue constantly. A yellow 'Party' rose introduced in 2014 might, for example, be replaced by a newer one in 2018 because the Olesens consider it superior in any number of different ways to the previous one. The quality of such roses is therefore always improving. This is significant because traditional roses like Hybrid Teas and Floribundas acquire an individual reputation for excellence and it is sometimes difficult to persuade the buying public, for example, that this year's dark red Floribunda is very much better than the one that so many people grow and has been around for 20 years.

Poulsen Roser has continued, of course, to breed Hybrid Teas and Floribundas for traditional and knowledgeable rosarians. The names of these roses are important because each variety acquires a reputation among rose-lovers. It is something of a paradox that nameless pot roses are sold much more widely and in much greater numbers. That said, the Poulsen list of modern Hybrid Teas is long and distinguished: it includes Karen Blixen ['Poulari', 1992], Tivoli 150 ['Poulduce', 1994] and Victor Borge ['Poulvue', 1999]. Elaine Page ['Poulht008'], introduced in 2011, is a very popular recent addition, as are Fabulous ['Poulpmt007', 2008] and Look Good Feel Better ['Poulcas034', 2010]. And, of course, Ingrid Bergman ['Poulman', 1983], introduced 35 years ago, is still one of the best-selling red roses throughout the world.

But the Olesens have further refined their rose-breeding by developing sub-categories that set higher standards and offer a consistent product. The Renaissance series of roses, for example, has been developed as strong bushes with large flowers, a many-petalled 'old-fashioned' shape and a strong scent. It includes some of the best-known of all modern roses - Alexandra Renaissance ['Pouldra', 1988], Sophia Renaissance ['Poulen002', 1989] and Clair Renaissance ['Poulsyng', 1995]. The latest are Aveline [Poulren028], Joleen [Poulre032], Lilo Renaissance [Poulren029] and Odelia Renaissance [Poulren017], all introduced in 2017.

What of the future? Mogens and Pernille Olesen are both approaching the age of seventy. The success of Poulsen Roser has enabled them to pursue other interests, including wine-making in France and breeding wild animals in South Africa. They have no children, which means that there is no-one to inherit the rose-breeding enterprise. But it is a soundly-based business with a staff of ten experienced professionals working at breeding, selecting and trade-marking, as well as covering all the other disciplines that a production-based activity requires in order to survive and to thrive. It is fair to assume that, at some point in the future, Poulsen Roser will be sold as a going concern. And the Poulsen name has considerable value as a business asset, so it is very likely that we shall be able to buy and enjoy further 'Poulsen' roses for many years to come.

The Old Rose Heritage of Österlen: Lost, found and preserved for the future

Mia Gröndahl, Sweden

Abstract

“Do you have an old rose in your garden?” The call for old roses in the province of Österlen in 2003 opened up a box of hidden treasures – and future possibilities. The rose survey took a couple of years to complete and yielded more than 200 different heritage roses; and half of the varieties were propagated and planted in a rose garden in the town of Simrishamn specially designed and dedicated to the roses found in Österlen. And it didn't stop there. A local heritage rose association – Österlenrosor – was established, creating the week-long Österlen's Rose Festival that has since become an annual tradition. The Festival is a unique cooperation between the heritage rose association, Österlenrosor, and the municipal council of Simrishamn, and led to a massive planting of roses in the villages of Österlen to preserve the old roses and bring even more beauty to the region. We all know that the only way to keep the old rose heritage alive is to keep propagating and planting the old roses – even at times when they are out of fashion!



Österlen is a Baltic province in the southeast corner of Skåne, Sweden, a comfortable distance from the big sister cities in the west, Malmö in Sweden and Copenhagen in Denmark. Österlen is known for its keen interest to preserve nature and cultural heritage; the old garden roses are today an integrated part of Österlen's heritage.

CV

Mia Gröndahl is a Swedish writer, photographer and rose lover, residing in Österlen, the south-east corner of Sweden. For two decades Mia was based in the Middle East, but went back each spring to cultivate her garden. She started in 1985 with an empty field of three acres and five trees, today the garden is known for its magic mix of climbing roses and trees; a natural garden more wild than tamed. Mia is the author of several books on cultural and garden history, her latest "Österlens Gamla Rosor" (Old Roses of Österlen) is the result of more than a decade long research and documentation of the heritage roses in the region of Österlen. Currently, Mia Gröndahl is project leader at Christinehof Castle.

NO LECTURE MANUSCRIPT AVAILABLE

Volčji Potok Arboretum: Bringing together the best roses from west and east

Matjaž Mastnak, Slovenia

Abstract

In 2017 Volčji Potok Arboretum was a venue of the WFRS Regional Convention. For this occasion, the old rose garden has been refurbished and the number of rose varieties risen from 300 to 900. Beside the formal rose garden another rose garden for shrub roses was created.

There were two main goals of increasing the number of roses. The first was to create a regional collection of roses, focused on the cultivars bred eastwards of the line Trieste-Szczecin, and the second to present contemporary disease resistant roses.

The regional collection consists of more than 200 cultivars, bred in Eastern and Central Europe. To collect and test the roses, created from Poland in the north to Israel in the south and from Austria in the west to Russia in the east, is also a future specialisation of Volčji Potok Arboretum.

The selection of modern roses from the West focuses on disease resistant varieties. Almost 25% of the rose varieties grown in Volčji Potok Arboretum have been introduced to the market in 2006 or later. Leaves' health is an important issue in Slovenia due to high temperatures and abundant rainfall in summer (700 mm of rain falls from April so September). For the last two summers we assess the health and winter hardiness of the cultivars in order to make a list of recommended roses for the region.

CV

Matjaž Mastnak is employed as a dendrology consultant and is the head of rose gardens at Volčji Potok Arboretum, Slovenia. After finishing studies of forest management and ecology at the University of Ljubljana, he specialised in ornamental woody plants, among them roses.

He is a lecturer on higher vocational schools and an author. He writes for garden magazines and he has written weekly to the Slovenian Sunday newspaper for 14 years. In the 90' he wrote more than one hundred screenplays for a series on nature for national public broadcasting. He is also author of books, two of them on roses.

He is secretary of The Slovenian Rose Society and was a member of the organizing committee for the Regional WFRS Convention, Ljubljana 2017.



Volčji Potok Arboretum: bringing together the best roses from west and east

In 2017, Volčji Potok Arboretum was a venue of Regional Convention of World Federation of Rose Societies. For this occasion, the old rose garden has been refurbished and number of rose varieties risen from 300 to 900. There were two main goals of increasing the number of roses. The first was to create a regional collection of roses, focused on the cultivars bred eastwards of the line Trieste -Szczecin, and the second one to present contemporary disease resistant roses.

Volčji Potok Arboretum is a public park, extending over 85 hectares. It is located 25 kilometres from Ljubljana, capital of Slovenia. The Arboretum was established in 1952 as a part of University of Ljubljana. In the same year, it was legally declared a place of cultural and natural heritage of national importance. It is cultural heritage due to historic park, location of a Renaissance mansion house and ruins of a medieval castle. The reason for declaring the place natural heritage was an existing collection of woody plants, growing in the mansion park. Grounds are still owned by Republic of Slovenia.

Today, Volčji Potok Arboretum is a public institute, partly financed by Ministry of Culture and partly by its own economic activities. The institute maintains the cultural monument, presents its virtues and manages the estate. There are 90 people employed at the institute and about 30 of them take care for the park.

Yearly, about 200.000 people visit Volčji Potok Arboretum. It is a quite high number in a land of 2.000.000 inhabitants. About 10 % of visitors come from abroad, predominantly from Italy and Austria. As entry fees are an important source of income, management of the Volčji Potok strives for attractive flowering program in the park. The best known is the spring flower show, starting in March with meadows full of daffodils in reaching the peak in second half of April with 2 million flowers of tulips and other bulb species. Spring flower show can attract up to 50 % of the yearly number of visitors. The spring flower show is accompanied by a horticultural and handicraft fair.

In May, rhododendrons in English park burst in an unparalleled display of bright blooms. Seasonal flowers and perennials make park colourful in peak summer. In-between, in the second half of May and in June, the main flowering attractions are roses.

Evolution of rose garden in the Volčji Potok Arboretum

Before Arboretum was established, roses had no particular role in the mansion park. There were few climbers planted and two of them, an 'American Pillar' and an 'Excelsa', still thrive in their original locations. With their age of nearly hundred years, they prove to be really durable cultivars.

The first plan for a rose garden in Volčji Potok was drawn in 1963. Two years later, about 50 cultivars, mainly of German origin, flowered in a new rose garden. The rose garden had a strong wintergreen frame of conifers, as the area of 0,6 hectare served as a rose garden and a pinetum at the same time. The idea was that roses make the place of interest over the summer, while for the rest of the year the collection of conifers would draw attention to itself.

After forty years, the roses were worn out and the soil fatigue obvious. In 2002, I have got the task to make the project for the renovation of the rose garden. I proposed to retain the original idea of a rose garden in a "room" of conifers, and placement of the rose-beds in a form of chessboard. The loop around rose-beds reduces tension among cultivars of similar colours and enables access to every single rose breed. Number of beds has been increased up to 250 in the following few years. As on one bed one rose cultivar has been planted, the number of beds corresponds to the number of rose varieties.



An important part of the scenery of the Upper Rose Garden is the »borrowed landscape«: the picturesque church on the top of Homec Hill in the south and the Kamnik Alps with the peaks of 2.500 m a.s.l. in the north.



Pergola at the entrance of the Upper Rose Garden.

At the end of nineties, roses still had a bad reputation among gardeners and garden designers. Roses were believed to be problematic plants with short a flowering period and great susceptibility to fungal diseases. This prejudice was grounded on the experience with the varieties from the 70s and 80s, when majority of roses followed an ideal of big flowers, strong and special colours and disease resistance was not an issue. General access to new rose varieties was limited till Slovenia joined EU in 2004. Since then, free import of roses from common market has become possible for everybody.

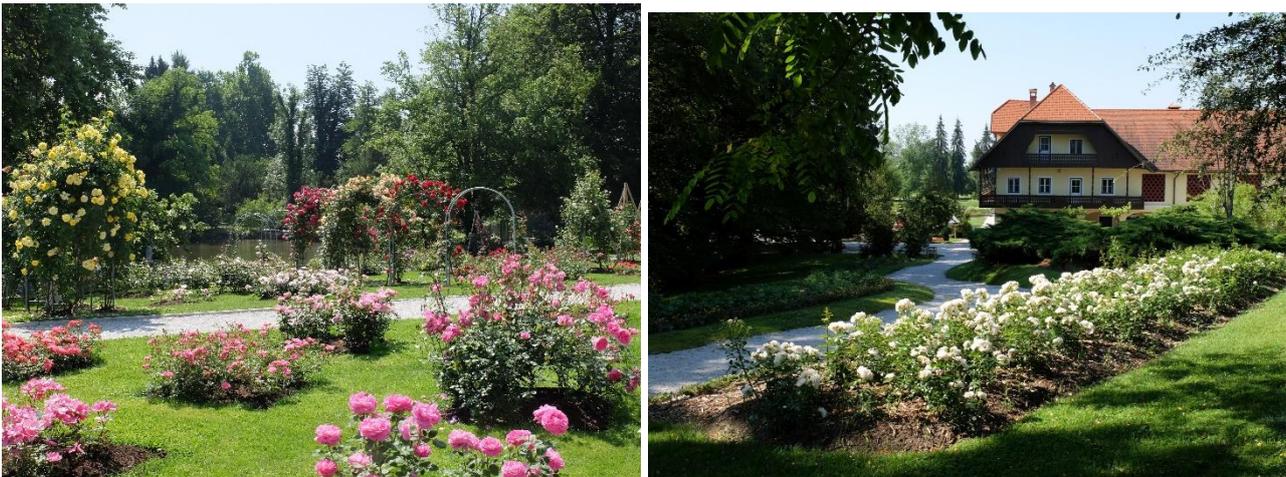
In 2002, we decided to change assortment of rose varieties thoroughly. Our goal was to present varieties, which have been declared or reported to be resistant to fungal diseases or at least more resistant than the roses form earlier decades. Leaf health issue is important in central Slovenia, as summers are long, temperatures high and rainfall abundant. About 700 mm of rain falls from April to October and the rainiest month is June. Not every rose variety is able to stand healthy and with appealing flowers in such conditions. On the other hand, winters can be cold, with temperature down to -20 °C. It means that winter hardiness is also a sought feature for roses in continental Slovenia.

The new planted rose garden enabled professionals in Volčji Potok Arboretum to assess rose varieties in make a selection of recommended roses for central Slovenia. From 2002 on, all varieties have been completed with name plates, which was important for general public to learn about cultivars and how to order them.

In 2015, the management of Volčji Potok Arboretum decided to support Regional WFRS Convention Ljubljana 2017. The rose garden has therefore been refurbished and number of rose varieties risen from 300 to 900. There were two main goals of increasing the number of rose varieties. The first was to create a regional collection of roses and the second one to present contemporary disease resistant roses.

Beside the rose garden with formal layout on the old location we planted another rose garden which we named the Lower Rose Garden. It consists of rose groups and rose-beds in organic form, attached to the background of trees and shrubs. It hosts predominantly shrub roses, which are more suitable for open space. Many hybrid rugosas, hybrid musk roses, shrubs and species roses are planted there. To distinguish the older rose garden from the Lower Rose Garden we named it the Upper Rose Garden, as it is placed on a

terrace above the maierhof and administration buildings. The Upper Rose Garden host 600 cultivars and the Lower Rose Garden 300 cultivars of roses.



Climbers on arches with the Big Pond in the background. The old meierhof building with a bed of splendid 'Ljubljana' variety in front of it. The basic planting pattern follows chessboard order of rose-beds with one variety in a rose-bed.

The regional collection

When Slovenian Rose Society officials were thinking about the program of Regional WFRS Convention in Ljubljana, they decided to focus on the rose history, rose breeders and roses of Central and Eastern Europe (CEE). It was the Regional Convention for CEE. The region is a part of the world which hasn't presented its "rose landscape" on a WFRS convention till then.

Volčji Potok Arboretum joined the Convention's orientation by creating a collection of roses bred in CEE. Upon our knowledge, there was no rose garden with a systematic presentation of roses from CEE in Europe. With its creation Volčji Potok Arboretum should develop a specialisation relevant on a broader European scale.

The CEE region, according to WFRS, comprises states lying eastwards of the line Trieste-Szczecin. Included are all European Slavic states, Austria, Romania, Greece and Israel on the south.

On the very beginning of the development of the idea of regional collection we made a decision not to strive for a complete but for a representative collection of roses from CEE. Till 2017, we planted 199 varieties bred in the region and we plan to expand the collection in the future. At the same time we are testing the varieties for their hardiness and beauty and we plan to gradually develop a selection of the cultivars suited for the local climate. Represented should be older varieties as well as contemporary breeds from the included states.

The regional collection comprises:

- 64 varieties from Czech Republic and Slovakia (respectively Czechoslovakia),
- 58 varieties from the former of Austro-Hungarian Empire,
- 30 varieties from Russia and Ukraine (respectively Soviet Union and its republics),
- 18 varieties from Poland,
- 11 varieties from Croatia, Slovenia and Serbia (respectively Yugoslavia),
- 6 varieties from Hungary,
- 4 from Romania,

- 3 from Austria and
- 5 from other states in the region.

28 % of the CEE cultivars belong to hybrid teas, 21% to climbers, 20 % to shrub roses and 14 % to floribundas.

In 2015 we asked rose societies from CEE for recommendation which varieties from their states are the best and where to buy them. From Czech, Greek, Slovak, Polish and Romanian rose societies we got not only advice but also plants donated. We got a generous donation of Soviet/Ukrainian/Russian breeds from Nikitski Botanical Garden in Yalta. Friends from Croatia donated young plants of Croatian varieties, Mr. Petrović donated his breeds from Serbia and Mr Weber from Baden near Vienna let us take scions of Geschwind's roses. We are grateful to all of them. We are grateful also to Mr Boronkay to organize the acquisition of Hungarian roses. In addition, many CEE varieties were purchased in Czech and Polish rose nurseries.



Part of the collection of the newer ground-covers.



In the Lower Rose Garden roses are planted in groups, consisting of mixed modern varieties and once-flowering historic and wild roses.

Contemporary disease resistant roses

The regional collection serves presenting and preserving roses which are relatively rarely seen in other parts of the world. Breeds from CEE represent 21 % of whole rose collection of Volčji Potok Arboretum.

Percentage of other roses by the land of origin is as follows:

- 33 % of varieties were bred in Germany,
- 19 % in France,
- 9 % in United Kingdom,
- 4% in United States,
- 8 % in other states and
- 6 % are wild species or varieties with unknown land of origin.

The largest share of roses, as far as country of origin is concerned, goes to German roses. It is because of their winter hardiness – temperature in Volčji Potok may fall under -15 °C and occasionally -20 °C under in winter. The second reason is German orientation into breeding of varieties resistant to fungal diseases. The first series of roses which proved themselves to be low maintenance and to thrive and flower without

chemical protection were German cultivars. The third reason in traditional orientation to Germany as far as gardening is concerned.



Collection of 51 varieties, bred by Rudolf Geschwind, the most important rose breeder of Austro-Hungarian Empire.

The Lower Rose Garden is part of the spacious English-style park, where taller shrub roses and climbers are preferred to correspond better to the dimension of the space.

(Photographs by Matjaž Mastnak)

To make an up-to-date collection of contemporary roses we asked for help big rose breeders from Europe and got young plants at reduced prices or donated from Kordes Rosen (Germany), Meilland (France), Lens roses (Belgium) and Rosen Tantau (Germany). We appreciate the kind gesture very much. We purchased roses also from other sources. The main criterion for choosing varieties was their hardiness and disease resistance.

As the result, we grow a very up-to-date collection of modern rose varieties in Volčji Potok Arboretum. 24 % of the rose cultivars have been introduced in 2006 or later and 38 % of all varieties have been introduced to the market in 2001 or later. It is a splendid testing field to study and compare the recent rose varieties.

Earlier in the lecture I explained that leaf health is an important issue in Slovenia due to its climatic conditions. The second reason for searching for healthy roses is that more and more people refuse to use chemical spraying in their gardens. For those without restraint against plant protection with phytopharmaca there are more and more restrictions at buying the agents. The general trend should therefore be to promote and sell healthy and easy-to-care varieties. There is increasing number of such roses even between hybrid teas.

On April 1, 2018, the rose collection in Volčji Potok Arboretum consisted of 945 varieties. 22 % of them were hybrid teas, 17 % floribundas, 33 % of shrubs, 13% of climbers, 12 % of other rose classes and 3 % of species. The current stand of cultivars with their location in the gardens is published on <http://www.arboretum.si/arboretum/zbirka-rastlin/sorte-vrtnic>.

Since 2018 we assess the health and winter hardiness of the cultivars in order to make a list of recommended roses for the region. We also experiment with the use of natural agents for strengthening of plants (*Pflanzenstärkungsmittel* in German) in comparison to conventional fungicides.

Conclusion

Volčji Potok Arboretum used the Regional WFRS Convention in Ljubljana as an impulse for development of its rose plantations in two directions: in establishing the CEE regional collection and in modernising the general rose collection, focusing on disease resistant varieties.

To collect and test the roses, created from Poland in the north to Israel in the south and from Austria in the west to Russia in the east, is also a future specialisation of Volčji Potok Arboretum.

Our aim is also to study the collection of modern western roses (38 % of today's grown cultivars were introduced in 2001 or later) and to search for best roses for regional climate.

We kindly invite you to visit Volčji Potok Arboretum and Slovenia, which can actually offer much more than the one rose garden to rose friends. We are looking forward to sharing experience and knowledge of roses and to collaborating with other rose gardens and organization in future.

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The role of mycorrhiza in rose plants

Sabine Ravnskov, Denmark

Abstract

Plant beneficial microbes in the soil play a key role in plant growth and health, by influencing plant nutrient uptake and by protecting plants against disease. Most plants (~80 %), including roses, naturally form a mutually beneficial symbiosis with arbuscular mycorrhizal fungi in the soil. Traditionally, this arbuscular mycorrhizal (AM) symbiosis has functionally been characterised by the reciprocal exchange of nutrients between the partners in the symbiosis: the AM fungus receives carbon from the plant, whereas the plant receives inorganic nutrients such as phosphorus from the AM fungus. However, the potential of the AM symbiosis to protect plants against several diseases has also been demonstrated. When roses are grown in natural soil, the AM symbiosis is naturally formed in the roots of the plants and will be an integrated part of plant functioning by influencing nutrient uptake, growth, flowering, resistance to diseases etc. of the rose plant. However, the beneficial outcome of the AM symbiosis for the rose plant will depend on the environment! For instance, most peat-based growth media does not contain the AM fungi and then the symbiosis cannot be formed. Also, intensive fertilisation with phosphorus will lower or prevent AM fungal colonisation of the roots and the use of some fungicides will harm the AM fungi. However, by providing optimal conditions for the AM symbiosis, growth and health of the rose plants can be optimised in a natural way.



CV

Dr. Sabine Ravnskov has an MSc degree in biology/mycology and a PhD degree in plant microbiology from the University of Copenhagen. At present, she is employed as an Associate Professor at Aarhus University, Department of Agroecology. Dr Sabine Ravnskov's research has during the last 25 years focused on microbial interactions in soil and roots with special emphasis on the role of the mutual beneficial plant-fungus symbiosis, arbuscular mycorrhiza (AM), in plant nutrient uptake, growth and tolerance to diseases and to abiotic stress as drought and heat. In the past, she also investigated the influence of the AM symbiosis on rose plant uptake of phosphorus, growth and resistance against grey mould.

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How to keep roses healthy without plant protection products

Carsten Marker, Denmark

Abstract

For over two years the Danish company E. Marker A/S that produces a range of bio-active products has conducted research to perfect a foliar micronutrient rose care product called GroGreen Feed & Shine Roses. Following both laboratory research and field trials in Denmark and in the UK the 2017 trial represents the culmination of the product research and formulation refinement, to verify the products activity in a practical application.

Conclusions from the 2017 trial work: The untreated control treatment showed the poorest performance, demonstrating that some treatment is necessary to achieve higher quality rose plants. The application of both the 1% and 2 % Feed & Shine treatments in the trial demonstrated benefits to reducing both powdery mildew and blackspot. There were also additional benefits to plant vigour resulting from applications of 1% and 2% Feed & Shine. Fungicide treatment will maintain plant health, though less effective in promoting plant vigour or rooting. Seaweed extract applications enhances plant vigour, but also appears to contribute to powdery mildew. In this trial the GroGreen Feed & Shine Roses product showed the required benefits to rose plant health and vigour to be of benefit to all rose growers both amateur and professional.



CV

Carsten Marker: Master of Arts (M.A.) Marketing, Economics, English.

Since 1998 Managing Director and owner of E. Marker A/S. Sales, marketing, research, product development and on-line marketing. We supply environmentally friendly organic fertilizers, mycorrhizae etc. to garden centers and golf courses.

I enjoy being outside, walking, biking, a bit of golf and gardening. I love my garden. When forced to it I mow the lawn and hand weed all over (no pesticides of course). I find it exciting to experiment and to use my own fertilizer products in the garden. I am not a rose specialist. However roses smell fantastic.

How to grow roses without Plant Protection Products

SLIDE 1:

Hello all Rosarians in Copenhagen.

Thank you for inviting me to talk about my passion here today. It is very special date for many reasons!! Happy 4th of July to all of you from the US. It is my 20th anniversary to today. Thank you Marianne for putting up with me. Plus 20 years as self-employed.

I would like today to try and show you what I believe could be a way forward for all of you who love ROSES and gardening without the use of fungicides or Plant Protection Products, and who would prefer to grow roses with only a minimum of pesticides at home. **NOTE:** Within the framework of the current Danish and EU fertilizers laws. **VERY IMPORTANT.**

It is either for personal beliefs or due to pesticide restrictions that many gardeners don't use as many pesticides anymore. Worldwide fewer and fewer traditional pesticides are available in garden centers to consumers for the control of plant diseases, to prevent insect damage and for weed control.

The general challenge for all innovative suppliers in Denmark is which claims you make on product labels, in marketing, online etc. There can be no pesticide claims at all even if you have found a way to create healthy roses without the use of input from traditional plant protection products/fungicides to keep roses diseases at bay. With claims you need to register your product at very high costs.

In my professional life I seek to develop solutions and organic based NPK products for growing plants, turf, roses, trees etc. which combine existing knowledge with outside of the BOX thinking to offer a range of fertilizer products (liquid/granular) to end users which will give Happy Roses with a as little problems as possible with common Rose plant diseases like rust, mildew and blackspot.

As a small Danish company there is no way we can afford to register bioactive products within the current EU system. The EU system does not favor small businesses and therefore my presentation today must be seen in this light. It will cost 1-2 million Euro to seek registration per product.

In Denmark the market for organic/ecological products in all walks of life has boomed over the last decade. In the beginning it was a trend only for the few to go organic now it is a MEGA TREND for the masses. Also it is seen as unacceptable by many consumers as well as the "official" Denmark to use pesticides at home. Hence the need for fertilizer product innovation and the combination of new materials for the ultimate goal which is to GROW ROSES WITHOUT PLANT PROTECTION PRODUCTS or at least with only a minimum of pesticides.

The withdrawal of many pesticides to control disease and insects from the hobby market makes it difficult to keep roses beautiful and in good shape. Combine this with the climate change with the unpredictable weather in growing season. It is warm & cold. Dry & wet.

It creates perfect conditions for all sorts of problems for roses with unhealthy growth. Then we get demotivated as gardeners if the roses are not pretty.

I believe there is nothing more rewarding than the smell of blooming and healthy roses. Before I go to the office I have to walk around my house to see how the roses are doing.

For me the logical solution for growing healthy roses without plant protection products for both amateurs and professionals is to combine the use of organic NPK fertilizers with biological fertilizers which will provide input from beneficial microbes and mycorrhizae fungi to the soil as well as the use of soil conditioners, seaweed and composts. This will create a healthy soil life and stronger and much more robust roses than roses grown only with mineral NPK fertilizers.

Combine everything you can of organic/biological input for your soil and your roses in the below ground area with liquid foliar bioactive micronutrients products for the above ground area is the way to grow healthy roses where only a minimum of plant protection products against the common rose diseases are needed.

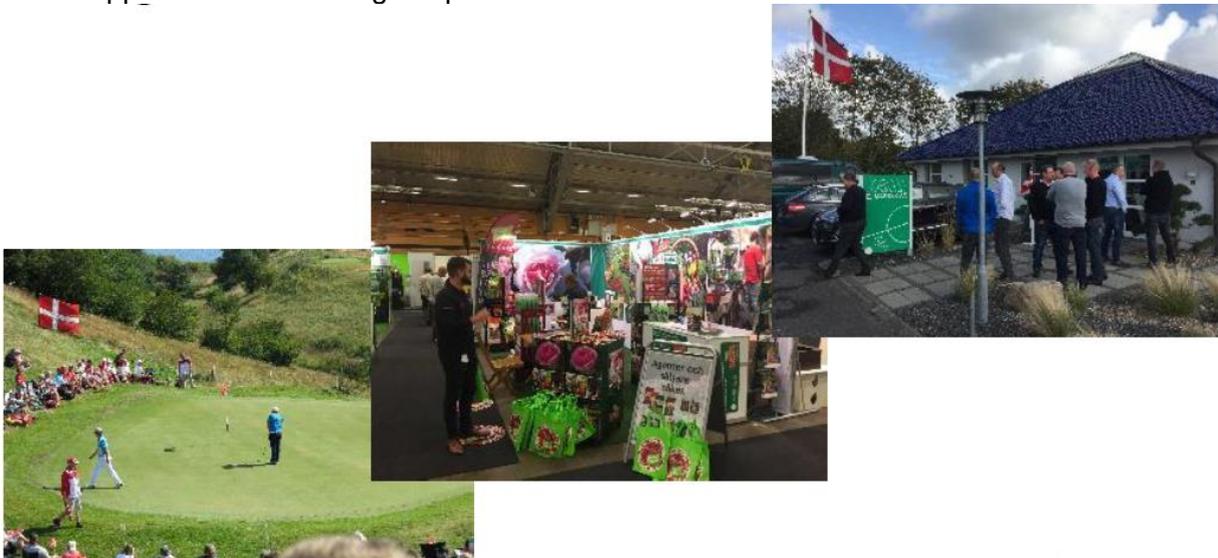
DON'T PANIC GO ORGANIC - Nature will take care of it.

I have always used organic products in my own garden and this is also here where I get some of the ideas and inspiration to new products.

SLIDE 2:

A few words about myself: I am Carsten Marker and I am the happy company owner of E. Marker A/S. We are based in Padborg in South Denmark.

I am 55 years old and for 20 years it has been my privilege to sell a range of products into golf courses, stadiums and garden centers. I enjoy gardening, golf, mountain biking (only hills in Denmark) and to develop new products. I have to admit I am not a rose specialist with a profound knowledge of roses and rose varieties. My approach to roses is a more universal approach which can be applied to a wider range of plants as well.



My own garden is probably just only above average when it comes to maintenance and the way it looks. However, I do believe gardening is a very healthy way to get exercise and time for yourself. I can just never stop being excited about growing plants in my garden. I only use organic and biological fertilizers for my roses.

The range of products we sell include mineral/organic/biological NPK products, micronutrients, wetting agents, microbial products, biostimulants and soilconditioners.

Healthy plants require less input from pesticides.

SLIDE 3:

We are 6 passionate staff members who cover Denmark, Sweden, Norway and Germany. I have a Masters degree in Marketing, English and Economics.

I am selftaught when it comes to the products we sell. However over the 20 years we have built up a lot of knowledge and expertise in product development, trials, research, innovation and practical use of how to grow healthy plants, turf and in this cases roses with only a minimum input from pesticides.

This is the driving force behind the development of our product range.

Our knowledge of the non-chemical approach comes from the fact that the Danish golf courses 15-20 years ago were imposed strict restrictions on pesticide use. Instead of relying purely on pesticides to maintain healthy turf alternatives needed to be developed. We have been part of this industry change. This is now a global trend. We hope to continue to be part of this for our niche markets in our part of the world.

Why use a pesticide if there is a good alternative to the benefit of both nature, plants and end users?

The constraint of being a small company makes it necessary to work with really good industry partners who can help with product formulation, production and trials.

I am happy to say we are working with top professional partners with academic back ground from around Europe.

SLIDE 4:

Our two brands for the retail market in Denmark and Sweden are GroGreen and Osmo. GroGreen is owned by ourselves and Osmo by a Belgian manufacturer of organic fertilizers.

The trend to go organic has allowed us to focus on the following garden areas with organic and biological products for: Roses, Lawns, Rhododendrons, Grow Your Own, Ponds, Evergreen plants and flowers.

For the sports turf markets we use of own brand TourTurf.

SLIDE 5:

An example of a product we have developed for the turf market as an alternative to pesticides for snow mould control is our fertilizer product TourTurf FDC Autumn + R Factor back in 2007/2008. The product is registered as fertilizer with 9 % (N) Nitrogen 5 % (Fe) Iron, Chitin, Micronutrients and Essential Plant Oils (clove oil, citronella and teatree oil).

The key here to success for disease prevention is the unique nutrient combination with the iron and the plant oils which have antiseptic properties to keep the turf healthy on a preventative basis.

The use of the product 4 times from September to December with 40 L pr. ha on greens, soccer pitches etc. will enable the sports turf manager to prevent damage from snow mould or as it is correctly named *Microdochium nivale*.

This pathogen creates a lot of damage on golf greens and is very expensive to repair once the grass is infected. In most cases we can prevent 80-85 % of the problems associated with snowmould with the use of an integrated approach with correct fertilization and cultural practices.

TourTurf® FDC is a preventative concept for golf courses that wish to use a minimum of fungicides, as well as courses where fungicide use is forbidden due to national legislation or local restrictions. The FDC product was researched independently in both the UK and in Denmark.

It has become a standard product for many of our customers to use in the autumn winter period.

SLIDE 6:

In 2017 we have done quite some work with socalled screening tests of a range of products to see if the tested materials would have an effect to stop disease pathogens from growing in petri dishes.

This work has given us very good understanding of how to work with fertilizers with a preventative approach to disease problems with turf, plants and roses. This has been in cooperation with Colin Fleming from Queens University.



Then in the spring of 2018 we have been very lucky to get the chance to work with a Masters of Science Student Marion Hodel from France at Queens University in Belfast. This will give us a lot of information for product development.

Colin is an expert in the so-called nematodes which can cause severe rooting damage to turf, crops and even roses. We are doing new screening trials with a number of our products for both retail- and turf use. The products which are in scrutiny is a selection of materials of both organic and inorganic origin.

We want to see how if the test products can prevent the growth of common plant pathogens and reduce the damage from nematodes both in the lab and in the field.

We have seen that the use of mycorrhizae-based products plus other materials can reduce the impact of the damaging nematodes in golf greens. I think this can be applied to Roses too at home in your garden. So it will make sense to use organic input to prevent problems with your roses.

SLIDE 7:

As part of an ever on going process for our small company in both product development and evaluation of products/concepts/deas is to regularly meet up with suppliers and other key people to brainstorm, to plan and to think ahead.

This involves being part of tradeshows in Denmark and abroad to catch up with latests trends and ideas.

Feedback from customers is also a great way to either improve or to develop new concepts and ideas for new products to take to market.

I just want to mention a very important informal meeting in Copenhagen in 2015 for the development of our GroGreen Feed & Shine for Roses concept.

A coffee and great cakes meeting started the process where we wanted to take the knowledge from our product for turf FDC.. And bring this into a context for a foliar product for keeping Roses healthy with the use on nutrients and plant oils. For the retail market as we could see a big need out there.

Somehow we just came up with a sketch for the name Feeed & Shine. The concept was born right here in Copenhagen.

SLIDE 8:

The outcome of the one meeting mentioned in Copenhagen (2015) saw the launch of GroGreen Feed & Shine for Roses at the Garden Center Tradeshow in 2016.

Feed & Shine for roses is:

- A unique blend of micronutrients Iron, Manganese, zinc, Copper and Magnesium
- Three specific essential plant oils TeaTree Oil, Citronella Oil and Clove Oil – Protect against wind and weather...
- Seaweed added for biostimulant effect
- Blended with surfactants FOR complete leaf uptake. And for a nice SHINE of the leaves.

All of the ingredients work together in synergy and is designed to promote healthy growth both Above and Below Ground.

Our hope with the concept is to help Rose lovers to grow roses with only a minimum of Plant Protection products.

We want to offer a solution which also can be proven with data.

The use of the product ONCE A WEEK will prevent micronutrient deficiency in the roseplant, it will stimulate healthy root and plant growth and it will help to keep disease like rust, mildew and blackspot to a minimum”

Use the product PREVENTATIVELY.... And be a Rose HAPPY Gardener.

SLIDE 9:

We all love pretty roses...I do anyway..

There is nothing worse than roses which don't perform as expected. It is demotivating and we see that many give up on buying roses since it seems to be increasingly difficult to maintain the roses in good shape. Without plant protection products.

The diseases we see here in Denmark are: Mildew , Black Spot and Rust.

I think this is pretty universal and seems to be global problem. Climate change does not help either.

Even with disease resistant rose varieties, good rose hygiene like removing litter, leaves, more air, cleaning pruners and maintaining good levels of nutrition, giving enough water, we can still see a lot of problems with disease.



Then add to this aphids, rose leafhoppers, caterpillars, weevils. Long list of pests. There is enough to worry about when you have roses at home.

In this context of my presentation I am limiting myself to talking about how to keep roses as disease free as possible without having to use fungicides on a regular basis.

SLIDE 10:

In my opinion to go organic and biological in combination with a liquid foliar bioactive micronutrient fertilizer makes sense.

I think this is the way forward for all rose lovers. It will help you at home in your garden to get the best out of your roses.

Well-fed plants are the best defense against disease pathogens and insect damage.

BELOW GROUND:

Use organic fertilizer to feed the soil and the plant at the same time. Use 4 times a year from Spring to Summer. Use a handful of product pr. plant. Combine once a year the organic fertilizer with a biological product containing nutrients, mycorrhizae and bacteria to revive the soil and keep the plants happy with the beneficial microorganisms.

This will create a strong healthy root system with a lot power to sustain good plant growth.

Organic fertilizers in general will suppress disease pathogens and nematodes in the soil and hence give very ROBUST plants which better can withstand disease pressure.

ABOVE GROUND:

This where it becomes interesting. Use GroGreen Feed & Shine for Roses every week and you will see much you can improve the vigor of your roses by simply spraying the product over the leaves in a 1-100 dilution rate. It smells great from the oils and will give the leaves a great shiny and presentable appearance.

Combine good nutritional products for below and above ground to get away from chemicals to protect your Roses.

PREVENTATIVELY. Very Important.

SLIDE 11:

In order to get some proper data on the concept and to "prove" the thinking behind GroGreen Feed & Shine for Roses we have undertaken quite a large trial in the UK in 2017.

Methodology Site:

Non-protected, though sheltered area on a former plant nursery, plants on Mypex & sand

Production:

Bare root plants, potted into deep 4 L containers using standard potting compost + SRF(Slow Release Fertilizers)

Plants:

4 David Austin varieties; Alba Maxima, Variegata di Bologna, The Fairy, and Kew Gardens

Timings:

Potted in spring, first tested in summer, with this trial conducted 1st Sept to 1st Nov 2017

Targets:

Rose diseases; Black Spot, Powdery Mildew, Downy Mildew and also plant vigour scoring

Product: Foliar applied GroGreen Feed & Shine Roses, containing micronutrients & plant oils

Applications:

3 product application rates of product applied:

1 %, 2 % and 3 % Feed & Shine

Treatments:

6 in total – 3 x product applications, 1 x untreated, 1 x fungicide, 1 x seaweed extract

Numbers:

96 rose plants in total, with 16 plants per treatment; 4 plants of each variety

Layout:

Blocks of 4 plants of 4 varieties in each randomized within treatments (laid out in order)

Assessments: Scoring system 1 – 9 to assess flowering, disease levels, plant vigour and rooting

Spraying:

500-650mls water + product / plot, the volume increased as plant size increased

Analysis:

Owing to trial style, statistical analysis not utilised, instead averaging of assessment scores

SLIDE 12:**Conclusions:**

The untreated control treatment showed the poorest performance, demonstrating that some treatment is necessary to achieve higher quality rose plants.

Through the application of both the 1 % and 2 % Feed & Shine treatments the trial demonstrated benefits to reducing both powdery mildew and blackspot

There were also additional benefits to plant vigor resulting from applications of 1 % and 2 % Feed & Shine

Fungicide treatment will maintain plant health, though less effective in promoting plant vigor or rooting.

Seaweed extract applications enhances plant vigor, but also appears to contribute to powdery mildew.

In this trial the GroGreen Feed & Shine Roses product showed the required benefits to rose plant health and vigor to be of benefit to all rose growers and both amateur and professional.

Additional Information:

A further trial with Feed & Shine will be conducted in 2018.

SLIDE 13:

I would like to thank you for inviting me here today.

A very big thank you for taking the time to LISTEN to my presentation. Thank you to the organizers of WRC 2018.

See you tonight. Let's party...

The Future of The World Federation of Rose Societies and Rose Societies

Kelvin Trimper, Australia

Abstract

The world is a very different place to that of 1968 when the World Federation of Rose Societies (WFRS) was formed.

The advancement in communications technology has reformed how we live and work. Equipment like home computers, fax machines and mobile phones did not even exist in 1968. Smart phones, tablets and notebooks have only become common in the past couple of decades. These devices have led to the emergence of social media platforms like Facebook, Twitter and Instagram. These have revolutionised the speed and accessibility of information around the globe. However, one key factor is the same. The rose has remained the world's most popular flower.

The future for rose lovers is blossoming in some countries, such as China and India, although facing some enormous challenges in others, where the purchase of both rose flowers and plants is in decline and some rose societies are struggling to maintain relevance and membership.

The WFRS is not immune from these challenges. If we don't address them and capitalise upon new opportunities, we may not be in existence in another 50 years. It is important to embrace generational change to keep our Federation moving forward. This lecture summarises my view on what we can do to ensure the popularity of the rose is maintained and the WFRS and Rose Societies can grow and prosper.

CV

Kelvin Trimper, AM, ARA, SMA

Kelvin is President of The World Federation of Rose Societies. Since 1999, Kelvin has lectured at many Rose Conventions around the world. He is a past President of The National Rose Society of Australia and Rose Society of South Australia, who awarded him Life Membership in 2012.

Kelvin received the Australian Rose Award in 2012 and T.A. Stewart Memorial Award in 2013 for services to the rose in Australia and New Zealand.

Established in 1993, Kelvin and Melanie's home garden is over half a hectare in size and contains 2,000 roses of all types.

Kelvin's horticultural interests have included experience as a fruit and flower producer and a Bachelor of Science majoring in Botany. He served as Deputy Chair of the Botanical Gardens of Adelaide and was Deputy Chair of The Nursery and Garden Industry of South Australia.

Kelvin is a Fellow of the University of South Australia and the Urban Development Institute of Australia. He was given the Australia Day Honours of City of Salisbury Citizen of the Year in 2012 and appointed a Member of the Order of Australia in 2018.



THE FUTURE OF THE WORLD FEDERATION OF ROSE SOCIETIES AND ROSE SOCIETIES

The world is a very different place to that of 1968 when the World Federation of Rose Societies (WFRS) was formed.

Technology, the various forms of media and ease of travel have significantly changed the way we live, learn, work and play. Sourcing information only requires a “press of a button” to be available instantly and we can travel to ninety percent of the world inside 24 hours and the rest within 2 or 3 days. Revolutionised reporting of significant events, disasters and news reaches our homes or electronic devices as it happens via live streaming or within a few hours.

Our love of the rose and our membership of local, national and international rose related groups have been greatly influenced by these changes over the past 50 years.

The other significant factor affecting our lives is the world’s rapidly increasing population and the growth of our cities as the countries we live in become more urban. This is having a huge impact on both private and public open space where we have traditionally grown our roses.



Rose Festival in Nanyang China

Whilst some places in the world like China and India have a rapid expansion in rose production and rose appreciation, others including WFRS founding countries England, Israel and Romania are now struggling to maintain membership of their National Rose Societies.

This paper summarises my views on what we can do to ensure the popularity of the rose is maintained and the WFRS and Rose Societies can grow and prosper.

“The future depends on what we do in the present”, said Mahatma Gandhi. Now is the time to act if we wish to ensure that the rose remains the most popular flower in the world.

There is no doubt that the rose is popular. There are at least twice the number of “searches” on information media platforms for the “rose” than other popular flowers. Enter “rose” and Google responds with about 559,000,000 results. Roses are the most used flower in floral bouquets and

are significant in many places around the world where they are regularly featured in a variety of cultural events such as weddings, funerals, festivals and birthdays.

We, the professionals and amateurs who love and appreciate roses, must use every opportunity to promote and share information on the rose and develop strategies to attract new members to our societies.

SOCIAL MEDIA

The first and very obvious avenue available to us to promote the rose is the use of social media. The number of users of social media around the world has exploded in recent years. Despite recent bad publicity regarding privacy and the protection of customer's information, the recent data on users is as follows:

Number of Active Monthly Users Worldwide (Source: Statista - January 2018)

ACTIVE MONTHLY USERS WORLDWIDE	NUMBER (In Millions)
FACEBOOK	2,167
YOU TUBE	1,500
WHATS APP	1,300
FACEBOOK MESSENGER	1,300
WE CHAT	980
QQ	843
INSTAGRAM	800
TUMBLR	794

In January, 2018, the world's population was approximately 7.6 billion with around 4.0 billion internet users, 3.2 billion active social media users and 5.1 billion mobile users.

Therefore if we are not using these platforms regularly to promote the rose we are, quite frankly, being irresponsible. If we are using them, we must ensure the design of our sites is of a very high standard and the content updated regularly and checked for accuracy to hold the interest of those who frequent our sites. In this regard, we may need to seek professional advice as there are many poor to average sites which are saturating the market.

The WFRS and Rose Societies around the world need to be allocating more time and effort to using social media from now into the future. I would like to see specific initiatives and expert Keynote Speakers addressing this topic on every Society's action list. The WFRS now has a Social Media Committee and we will be empowering this group to drive our initiatives.

ACTUAL CONTACT WITH THE ROSE

Although social media can provide us with an instant connection to images and information about roses and the gardens in which they are located, we all recognise that any activity which enables direct physical contact with roses, seeing, smelling and even touching them, can provide the greatest joy and pleasure of all.

Historically, we have relied on the general public coming to our events, including rose shows, rose society meetings, trial gardens and public garden events. These will still be important in the future. However, I believe we need to re-think our events to make them more colourful, informative and entertaining. We should consider incentives like free raffles, give-aways, gift tables and plant stalls to make events even more attractive to the wider community. We need to entertain as well as inform our audience.

We also need to find new partners to add further reasons to come to our events. These could be plant nurseries, book sellers, fertiliser companies, garden clothing and glove suppliers, cosmetic



Preparation of the Rose Show in South Australia

companies or even fashion houses. I have seen this happen at some recent shows I have attended and these new partners do provide additional interest.

However, in my view, we need to re-think our approach to the method we use to provide direct contact between individuals and roses. Our historic approach has been to ask the public to come to the rose.

We already have the most popular flower in the world. Therefore our job is to “let the flower do the talking” and be the attraction. To do this we can also take roses to our target audience.



Kelvin's Rose Talk in Hardware Store



Rose Display in Garden Centre

I suggest we need to seriously consider taking the rose to the places where there are large volumes of people or crowds. We need to be there with real, beautiful, colourful, highly perfumed roses. This could be in shopping centres, train and bus stations, airports, sporting venues, anywhere people congregate in large numbers.

The Japan Rose Society recently held a show in one of the busiest train stations in Tokyo. This was a brilliant new initiative.

Our challenge in these locations is to attract the attention of passing people traffic, hold their attention for a few minutes and then provide an experience which will have them wanting more information or interaction with the rose. If we hope to grow interest in the rose and our rose societies, we need to do this now.

As Abraham Lincoln stated, *“The best way to predict your future is to create it”*. We cannot sit back and wait for others to do this for us.

NEW PARTNERS

I often look at what the WFRS and Rose Societies around the world actually do. I ask myself, *“How could we do what we wish to do easier or better?”* Sometimes I believe our focus is too narrow and pure.

While we have a great product which is popular, we are not achieving much growth in its use or in our societies. This seems contradictory. I have studied some of the more successful interest groups including some sporting clubs, car clubs and arts societies. I have noticed that their growth is founded on a multi-faceted approach to their members and potential members. The use of social media and events do rate highly in their offer to members. However, they also have other strategies to attract interest.

These include partnerships with other organisations, many of which are very commercial. I must stress that I am not referring to “sponsorships” where an organisation may donate products or services to rose societies and gain some promotional benefit from the arrangement.

Partnerships are where both the rose society and the other partner organisation involved have to work hard to ensure the value derived by each organisation is greater than could have been achieved if each organisation worked or acted on its own. It's a bit like a marriage and like marriages, it takes shared vision and a genuine commitment to make it work and gain the benefits. Often, formal

agreements are entered into and these detail the tenure of the relationship, responsibilities of each partner and renewal or dissolution arrangements.

The most outstanding partnerships which exist in the Southern Hemisphere are between rose societies and the fertiliser company, Neutrog Australia Pty. Ltd.

In exchange for product endorsement, promotion and member champions provided by the rose societies, Neutrog gives a royalty on all retail sales of *Sudden Impact for Roses* to each society involved and provides products at special member prices, for use in promotions to attract new rose society members or for prizes for raffles. Neutrog also promotes rose related activities to its "Poo Bah" club members and on its Website and Facebook pages and donates vast quantities of its fertilisers to many significant public rose gardens and Botanic Gardens.

In Australia, this has been operating for nearly 20 years and almost AUD\$1,000,000 (one million dollars) has been provided in royalties and a similar value in donated fertilisers.

The result is that Neutrog "Sudden Impact for Roses" which was originally developed in collaboration with the Rose Society of South Australia and the Rose Industry, is the leading brand of rose fertiliser in Australia and a long way ahead of its competition.

Other partnerships are emerging with rose breeders, production nurseries and retail nurseries. All of them require effort from rose societies and their members and the commercial partners.

In recent years, I have become more interested in the benefits of forming relationships or partnerships with the professional print, television and radio media. Their reach can give us access to a massive audience. We have access to a fantastic and very popular asset, the Rose. We also have the skills, knowledge and experience to provide a constant flow of articles, photos and visually appealing events for the professional media to use to excite their audiences. All we need to do is to provide the information or events and make it easy for them to report it. The rose, as stated earlier, is already popular and will "sell itself".

I have been a regular guest on commercial radio for the past 100 months (or 8 ¼ years). We announce a "Rose of the Month" and provide knowledge on rose culture. Obviously we use this hour long, monthly session to promote the activities of our local rose society. This is free "advertising" and worth thousands of dollars annually. This partnership with commercial radio has certainly been beneficial to both organisations.

Rose Societies and the WFRS must, in my view, embrace the notion of mutually beneficial partnerships and proactively seek and engage potential partners.

NEW MARKETS

To understand new market opportunities we first need to understand where our current market gaps are and then develop strategies to fill these gaps.

We all recognise the average age of members in our Societies is increasing. Anecdotal evidence from specialist nurseries suggests that the average age of rose plant buyers is also rising. However, we know that interest in gardening among school children, particularly in primary or elementary schools, is growing - driven by a wave of interest in the environment and healthy living.

Therefore, the target age gap we need to focus on ranges from children to the mature age, 45 to 50 years. These are time-poor, impatient, technology savvy consumers. Among this group, there is very little loyalty, only relevance-driven by their self-interest.

Recent research has shown that this group requires better education regarding products and services, not more information.

Demand for immediate gratification must be satisfied. Differentiation from our competitors will require us to think laterally, with flexibility and to enter untried territories to attract and hold this market. We must embrace change.

So what can we do? First, we should try any reasonable idea and see what works. We must take risks and ignore the doubters. As stated by John F. Kennedy, "*Change is the law of life. And those who look only to the past or present are certain to miss the future*".

Who would have thought 20 years ago that our rose 'brand' has great value and we would be partnering with many organisations, including those like Neutrog mentioned earlier. Who also would have considered the use of new social media, like Facebook and You Tube.

The expansion of healthy life-style programs on television enables us to promote the fitness opportunities created via gardening with roses. It also enables us to expand the knowledge and experience of using roses in cooking, to flavour drinks including alcoholic beverages, and in medicine, a tradition spanning many hundreds of years in some cultures.

A growing market is cosmetics and the use of natural products like roses. This is a huge market worth millions of dollars and we need to better embrace this opportunity.

The use of rose designs in art, jewellery, fashion and logos are also new and expanding trends.

Finally, we should target organisations which have nothing to do with roses, but whose brand would benefit from links with roses. This is a new field, but look at the success of example roses named to benefit **charities** in Australia; such as the National Jockeys' Trust (providing funds to jockeys and their families left in hardship, especially due to severe injury, permanent disability or death of a jockey) which have received royalties from the sale of the **Black Caviar** rose (TAN97150), and Variety – 'the Children's Charity' which has already received proceeds from the sale of the **Peter Brock Foundation Rose** (HARencore), and those customers who have bought roses for the first time because of these causes and the roses named to support them.

I am positive about the future. But we cannot wait. For, as Malcolm X said, "*The future belongs to those who prepare for it today*".

If we are willing to embrace new and exciting technologies, take the Rose to the people, develop real and beneficial partnerships and seek to cater for new markets, including the younger generations, the WFRS and Rose Societies will be successful, grow and prosper over the next 50 years.