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THEORETICAL CONSIDERATIONS UPON THE ORIGIN AND NOMENCLATURE OF THE PRESENT ROSE CULTIVARS

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Abstract: The rose cultivars are inter-specific hybrids with polyphyletic and heterogeneous origin. The present rose cultivars are the result of introgressive hybridization, where the fertile hybrids from F1 are repetively crossbreeding with one of the parental species or with both species.

Key words: present rose cultivars, introgressive hybrids

The systematic framing of the present rose cultivars is almost always defficitary because of their heterogeneous origin. The literature abounds in classifications upon horticultural criteria, while the classifications upon botanic criteria are quite poor, although Word Federation of Rose Societies, through its periodic publication: Modern Roses XI (2000), as well as the handbook of botanic names [ZANDER, 1984], in conformity with the International Code of Botanical Nomenclature (2000) are framing the present rose cultivars in the gender *Rosa* L. "Hybrid Cultivars", without mentioning the name of the species. However, *Rosa hybrida* L., *Rosa tea* (*hybrida*), *R. floribunda* etc, after the model of *R. tea* Savi (syn. *R.* x *odorata* Sweet) are still present in prestigious publications.

We have to mention from the beginning that the rose cultivars are inter-specific hybrids with polyphyletic and heterogeneous origin (if we cite only a few examples: teahybrids, polyanths, climbing roses). In all specified cases, the genitor species are quite numerous: (3)5-10 and even more [ALOISI & JACOB, 1995; DE L. C. & al., 1999; ENCKE, 1958; GRISVARD & CHAUDIN, 1964; KRÜSSMANN, 1986; LORD, 2003; PETERSON, 1983; RUSU, 1973].

Informally, the name of the cultivar has been denizened, because of the fact that by vegetative multiplication the characters propagate themselves unmodified.

The case of the present rose cultivars is specific to other important ornamental plants, too, as follows: *Begonia* L., *Bougainvillea* Comm. ex Juss. corr., *Canna* L., *Cattleya* Lindl., *Clematis* L., *Dendrobium* Sw., *Dianthus* L., *Hosta* Tratt., *Iris* L., *Paphiopedilum* Pfitz., *Pelargonium* L'Herit ex Ait., *Rhododendron* L., *Sempervivum* L., *Tulipa* L., *Vriesea* Lindl. [ENCKE, 1958; GRISVARD & CHAUDIN, 1964; LORD T., 2003; ZANDER R., 1984].

In those genera, including *Rosa* L., there are some species which could present infraspecific taxa (cultivars or hybrids, under the case), on one hand, and interspecific hybrids with more than 3 parental species, on the other hand. Many times, the origin of the latter is unknown, because of the fact that some hybrids homologated or used in the amelioration are the result of free pollination, so the paternal form in unknown or because of the fact that they are allowed not to declare the parental form when homologating the cultivars or hybrids [BREMER & al., 2000; CEAPOIU, 1988; DE L. C. & al., 1999, DEBENER & al., 2000; YOUNGJU & BYRNE, 1996; KRÜSSMANN, 1986; LEVIN, 1979; ORNDUFF, 1969; ZANDER, 1984].

As we mentioned above, interspecific hybridizations had played an important role in the evolution of cultivated roses. Their evolution process had been developed during a

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few centuries, but the first reviews upon amelioration in roses had taken part in the second part of the amelioration process, after 1860. These reasons had made many scripts of rose evolution, being possible a great number of diagrams. Although these diagrams are different one to another, they contain common taxa (important as species) which are considered to play an important role in shaping their genefond. Here follow some of the most famous diagrams which present the evolution of old and modern roses [ALOISI & JACOB, 1995; DEBENER &, 2000): Levy (1938), Hurst C. C. (1941), Morey D. H., (1953), Wylie Ann (1954), Wilding J. H. (1959), Young N. (1960), Thomas G. S. (1964), Saakov S. (1965), Sieber J. (1968), Robinson E. E. (1969].

So, the species which contributed no doubtfully in the formation of cultivated hybrid roses are as follow: *Rosa chinensis* Jack., *R.* x *odorata* Sweet, *R. gigantea* Coll. ex Crép., *R.* x *damascena* Mill., *R. gallica* L., *R. centifolia* L., *R.* x *alba* L., *R. moschata* Herrm., *R. multiflora* Thunb., *R. foetida* Herrm., for the Hybrid Perpetual roses Hybrid Tea, Cluster-Flowered, Polyantha, Patio, Ground Cover and some park roses, *R. rugosa* Thunb., *R. wichuraiana* Crép., *R. rubiginosa* L., for the old English roses, and *R. multiflora* Thunb., *R. moschata* Herrm., *R.* x *kordesii*, *R. arvensis* Huds., *R. sempervirens* L., *R. wichuraiana* Crép., *R., setigera* Michx., *R. banksiae*, *R. filipes*, *R. gigantea*, *R. helenae* Red et Wills., *R. laevigata*, *R. longicuspis* Bertoloni, *R. rubus* Léveille et Vaniot, *R. soulieana* Crép. for the Climbing roses.

In all cases, beside the typical species used in hybridizations, a few infraspecific taxa have been repetitively used in order to fix all wanted characters, as follow: *R. chinensis* var. *semperflorens* (Curtis) Koehne, *R. chinensis 'Minima'*, *R.* x *odorata* Sweet *'Hume's Blush Tea-Scented China'*, *R.* x *odorata* Sweet *'Parkes Yellow Tea-Scented China'*, *R.* x *odorata* Sweet *'Fortune's Double Yellow'*, *R. damascena 'Autumn Damacs'* (syn. *R. damascena semperflorens* (Loisel et. Michel) Rowley), and later (the end of the 19th century and in the 20th century) some of the rose cultivars more used in amelioration (crossbreeding respectively) are as follow: *'Baroness Rotschild'* (Pernet Perre, 1968), *'Baronne Prévost'* (Desprez, 1842), *'Frau Karl Druschky'* (Lambert, 1901), *'La France'* (Guillot, 1867), *'Soleil d'Or'* (Pernet-Ducher, 1900), *'M-me Caroline Testout'* (Pernet-Ducher, 1890), *'Crimson Glory'* (Kordes, 1935), *'M-me A. Meilland* (Meilland, 1945), *'Independence*' (Kordes, 1950) etc. Beside the cited species, *R. canina* L., *R. pimpinellifolia* L., *R. multibracteata* Hemsl. et Wils., *R. roxburghii* Tratt., *R. laevigata* Michx., *R. bracteata* Wendl., *R. moschata 'Nepalensis'* (*R. brunonii* Lindl.), *R. sinowilsonii* Hemsl., *R. maximowicziana* Regel, *R. banksiae* Ait. fil., *R. filipes* Rehd. et Wils. have played a less important role [DE L. C. & al., 1999; KORDES, 1956; KRÜSSMANN, 1986; PATERSON, 1983; WAGNER, 2002].

More than one century has passed to group in a single hybrid the capacity of repeat-flowering of *R. chinensis* with the rusticity and frost resistance of *R. gallica*, the coriaceus foliage of *R. chinensis*, *R.* x *odorata*, the fragrance of *R.* x *odorata* and *R. damascena*, in the first half of the 19th century, constituting the horticultural group of Hybrid Perpetual. In order to complete this objective, *R. chinensis* and *R. gallica* have been frequently used in retro-crossbreedings. As a sequel, the present rose cultivars are the result of introgressive hybridization, where the fertile hybrids from F1 are repetitively crossbreeding with one of the parental species or with both species [Băra I., 1989]. As a parenthesis, the present rose cultivars are tetraploids, few of them are triploids and fewer are bi- or pentaploids (Fig. 1 and Fig. 2) [CAIRNS, 2000; KORDES, 1956; KRÜSSMANN, 1986].

In a short review of items number of roses, are present:

– botanic species, most of them carrying infrataxa: *R.* x *alba'Reine de Danemark'*, *'Felicité Parmentiér'*, *R. pimpinellifolia 'Single Cherry'*, *'Altaico'*, *R. foetida 'Bicolor'*, *R. foetida 'Persian Yellow'*, *R. gallica 'Officinalis'*, *'Versicolor'*, *'Cardinal*

Richelieu', *'Violacea'*, *R. centifolia 'Cristata'*, *'Fatin Latour'*, *R. damascena 'Trigintipetala'*, *'Versicolor'*, *R. rugosa 'Frau Dagmar Hastrup'*, *'Roserare de L'Haÿ'*, *R. chinensis 'Viridiflora'*, *R. multiflora 'Veilchenblau'*, *R.* x *odorata 'Maman Cocket'*, *'Mrs. Herbert Stevens'* etc; the cited cultivars have been created through other methods, excluding interspecific hybridization; most of the literature upon horticulture [CAIRNS, 2000; HESSAYON, 1988; LEVIN, 1979; ORNDUFF, 1969] improper includes these infrataxa in the category of cultivated hybrids; from genetic point of view, they are infrataxa of the mentioned species and taking into account the literature [GRISVARD & CHAUDIN, 1964], from taxonomic point of view, they belong to the mentioned species.

– cultivated hybrids, which consist of old garden roses: Bourbon Roses (*'Boule de Neige'*, *'Zephirine Drouhin'*, *'New Down'*), Noisette Roses (*'Blush Noisette'*, *'Gloire de Dijon'*, *'Maréchal Niel'*), Portland Roses (*'Duchess of Portland'*, *'Rembrandt'*), Hybrid Perpetual (*'Frau Karl Druschky'*, *'Président Briand'*) and modern garden roses: Hybrid Tea (*'La France'*, *'M-me Meilland'*, *'Kordes Perfecta'*), Cluster-Flowered (*'Independence'*, *'Märkenland'*, *'Laminuette'*), Polyantha (*'Masquerade'*, *'Orange Triumph'*), Ground Cover (*'Nozomi'*, *'Schneewittchen'*), Dwarf Cluster-Flowered (*'Anna Ford'*, *'Queen Mother'*, *'Festival'*), Ramblers (*'Blaze'*, *'Féliciré et Perpétué'*, *'Kaptain Kidd'*, *'Dorothy Perkins'*) and Climbers (*'M-me Meilland-Clb'*, *'Westerland'*), English roses (*'Graham Thomas'*, *'William Shakespeare'*), cultivars created after 1869.

Here follow two diagrams of rose evolution (Fig. 1 and Fig. 2)

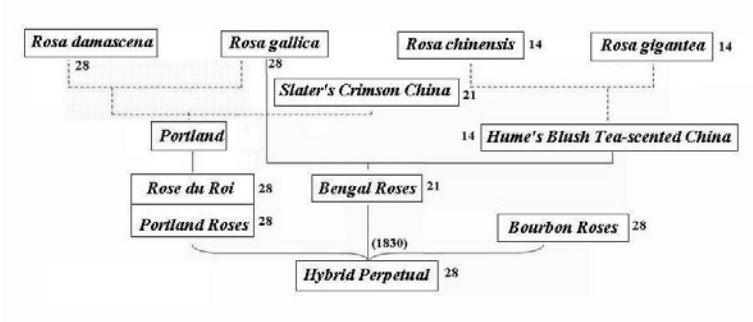

Fig. 1: Evolution of Hybrid Perpetuals by Wylie Ann (1954) [14]

Portland Roses: They are hybrids of *R. damascena* and *R. chinensis* var. *semperflorens*, created in Italy, a few time before those of Bourbon Group. They are small shrubs, bearing fragrant double flowers in shades of pink to red.

'Slater's Crimson China' syn. *R. chinensis var. semperflorens* called as Moon Rose, Bengal rose, forms bushes with few branches and red small and less numerous prickles, dark red semi-doubled flowers, discovered in Calcuta, in 1789.

'Hume's Blush Tea-Scented China' is an infrataxon of *R.* x *odorata* and presents a very important characteristic: the fragrance of the flowers, which is similar to that of the tea leaves. It was brought in England in 1809, then it was introduced in France and used in amelioration; it does not exist anymore today.

Bourbon Roses: The first Bourbon Rose was a hybrid between *R. chinensis* and *'Damask Rose'* that occurred naturally on the Ile Bourbon. Most of them are shrubs of 1.2-2 m, a few have climbing habit, highly perfumed and many of them present repeat-flowering characteristics. Hybrid Perpetual Roses: Becoming proeminent during the reign of Queen Victoria, this group has a complex parentage, involving several rose groups, including Bourbon Roses and China Roses. Growing 1.2-2 m tall, they are repeat flowering and bear large, double, usually fragrant blooms in shades of pink to red.

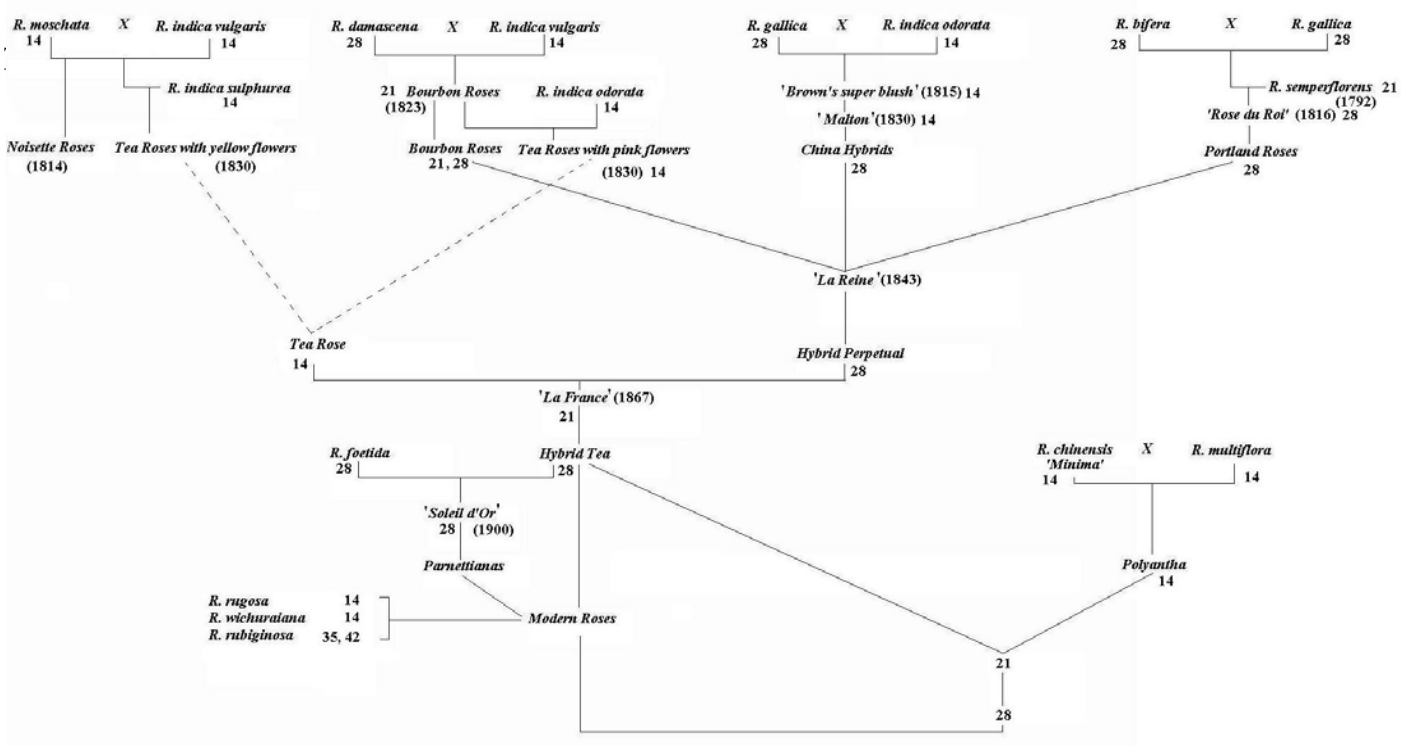

Fig. 2: The origin of cultivated roses by Aloisi Suzanne and Jacob Y. (1995) [1]

R. indica vulgaris syn. *R. chinensis*
R. indica odorata syn. *R.* x *odorata*
R. indica sulfurea syn. *R.* x *odorata* var. *ochroleuca* syn. *'Parkes Yellow Tea-Scented China'*
R. bifera syn. *R. damascena semperflorens* syn. *'Autumn Damasc'*
R. semperflorens syn. *'Slater's Crimson China'*

Noisette Roses: They represent an old group of roses, created in the United States of America and used in hybridization in France; they are hybrids of *R. moschata* and *R. chinensis*, bearing small, delicate flowers, with repeat-flowering characteristics.

Tea Roses (tea-scented) syn. *R.* x *odorata*: Are hybrids of *R. chinensis* and *R. gigantea*. They are erect plants which bear perfumed flowers in shades of white to red, including yellow, reminding tea scent. The plants are sensible to frost and have repeat flowering characteristic.

'Parkes Yellow Tea-Scented China', probably *R.* x *odorata* var. *ochroleuca* Lindl., was brought in 1824 in England; it bears light-yellow doubled flowers; it does not exist anymore today.

'Autumn Damask' syn. *R.* x *damascena* var. *semperflorens*, known as *'Quatre saisons'*, it bears pink flowers which bloom in the autumn.

Tea Hybrids: They are considered to be a distinct rose group coming from the hybridization of cultivars which belong to Hybrid Perpetuals and Tea Roses (tea scented). They are short erect plants (up to 1.5-2 m) with big perfumed solitary flowers or grouped in racemes pauciflowered.

Polyantha Roses: They are hybrids of *R. multiflora* and *R. chinensis 'Minima'*, short shrubs with small flowers grouped in multiflowered inflorescences. Later, a few cultivars belonging to this group crossbred with Tea Hybrids. They bear thin branches, from erect to sarmentuous or prostrates.

Climbing Roses: The Climbing Roses represent a very heterogeneous group, regarding their habitus and botanic origin. This group is comprised of Rambler, Noisette, Boursault, Climbing Tea and Climbing Bourbon Roses. The cultivars belonging to this group bear long branches, sometimes sarmentuous, other times semi-erect and rigid, repeat flowering or not, with big or small flowers.

In conclusion, the origin of the present rose cultivars is only partially defined, because their amelioration has started in the 17th century, while the preoccupations regarding plant hybridization have started later, in the next century and the ones doing amelioration have not blurt out their methods. Retrospective hybridization by modern methods depends on the specific introgressive hybridization and heterosis effect.

World Federation of Rose Societies (WFRS) recommends, starting with 1979, the model: *Rosa* L., followed by the horticultural group, cultivar's name, author's name and the year of homologation.

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